



MINISTRY OF EDUCATION AND
SCIENCE OF THE REPUBLIC OF KAZAKHSTAN

I.K. Amanova, A.T. Kamzanova

PSYCHOLOGY



Almaty, 2016

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OF KAZAKHSTAN**

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PSYCHOLOGY

Textbook

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and practical center "Textbook"*

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The textbook is written for the discipline "Psychology" in accordance with the standard curriculum for the group of specialty "Education". In the Textbook was included latest achievements and general issues of psychology, mental and cognitive processes, problems of personality, activity and communication, properties of emotion and volition, individually-typological features of personality and problems of human intelligence. The textbook is richly illustrated, has a glossary of basic psychological terms.

The textbook is designed for students, lecturers of universities and a wide range of readers who interested in the problems of modern psychology.

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PREFACE

The textbook presents a holistic view on psychological science, which integrates huge knowledge about mechanisms of human psyche development and its functioning. The textbook is also prepared for the purpose of systematization students' knowledge about psychological science, its history, psychological theories and concepts, reflecting different views on the functioning of the various mental phenomena; to create understanding about methods and principles of psychological science. Applied objectives of the course psychology is to form skills of students to apply psychological knowledge in their future professional activities for its efficient implementation, as well as to better understand themselves and others, to form harmonious relations with others.

The textbook covers substantive content of the course of "Psychology" in basic areas: Psyche and Consciousness, Human Behavior and Activity, main classification of Cognitive Processes and its' psychophysiological and psychological characteristics, individual differences of Personality and general knowledge about Interpersonal Communication as important areas of Social Psychology. Each of these chapters reviews main pertinent sources of information in domestic and foreign scientific literature that contain main classical and current understanding of psychophysiological and psychological features of behavior and psyche. Also in the textbook were included information about current research areas and scientific findings in Psychology, description of basic practical applications of psychological knowledge.

This textbook helps reader to get scientific knowledge about current theoretical approaches in psychology, understand main directions in applied psychology and to create ability to distinguish scientific psychological knowledge from unscientific one.

The textbook presents main concepts and ideas of worldwide known classical psychologists, such as R. Descartes, W. Wundt, E. Thorndike, B. Skinner, S. Freud, M. Wertheimer, W. Keller, K. Koffka, K. Dunker, J. Piaget, E. Kretschmer and W.H. Sheldon, A. Maslow, U. Neiser, J. Bruner, Russian scientists I.M. Sechenov, I.P. Pavlov, L.S. Vygotsky, S.L. Rubinstein, B.G. Ananiev, B.M. Teplov, A.N. Leontiev, Kazakh scientists like K.B. Zharikbaev, S.M. Dzhakupov and others who developed methodological basis of psychological science. In addition, this textbook was prepared for educating readers to make analysis of present research areas in Psychology with its classical theoretical knowledge.

The authors address this textbook for needs and interests of undergraduate students of pedagogical specialties, lecturers of Psychology Departments and

all other professionals who is interested in the theoretical and applied aspects of Psychology.

The structure of the textbook consists of 15 chapters. At the end of each chapter, the authors included several questions and tasks for independent work of students and list of recommended literatures. The glossary of psychological terms and full bibliography list are included at the end of the textbook.

The content and structure of the textbook complies with worldwide standards and requirements of writing of educational and methodical literature. The authors try to do their best in order to update the classic educational material on the subject of “Psychology” by taking into account the latest achievements of psychological science.

The textbook is prepared in accordance with the standard curriculum of discipline “Psychology” for students of group of specialities “Education”.

CHAPTER 1. INTRODUCTION TO PSYCHOLOGY

1.1 Subject and Tasks of Psychology

Psychology is a science that can answer many questions that have intrigued humanity about human being, what kind of features distinguish human from other species, even more why humans differ from each other. Moreover, Psychology addresses in depth to philosophical issues like the nature of consciousness and soul. But it's also a field that addresses to applied issues such as how to cope with psychological problems, how to raise children, or even how to make people happier.

The term «Psychology» consists in two Greek words “psyche” and “logos”, which are mean “soul” and “knowledge” respectively. This construction of words reflects traditional name of any science, where one part denotes an object of science, and the other the method of its attainment. Thus, Psychology in the science of soul or in current foreign psychology version is the science of mind.



Definition

Psychology is the study of the mind, including consciousness, perception, motivation, behavior, the biology of the nervous system in its relation to mind, scientific methods of studying the mind, cognition, social interactions in relation to mind, individual differences, and the application of these approaches to practical problems in organization and commerce and especially to the alleviation of suffering¹.

According to Y.B. Gippenreiter, psychology is the complex science that is known to mankind. After all, the psyche is the property of highly organized matter. If we keep in mind the human psyche, that to words “highly organized matter” must be added the word “most”: because the human brain is the most highly organized matter, known to us.

One of the founders of Russian psychology A.N. Leontiev gave the following definition: “Psychology is the science of the laws of development and functioning of mental reflection during lifespan and human activities”.

The main object of psychology is the person who is included in the set of relations with the physical, biological and social world by acting as the subject of activity, cognition and communication. Psychology examines the inner conscious or unconscious world of subjective (mental) phenomena, processes

¹ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 411

and states, as well as behavior. Thus, current Psychology can be defined as the scientific study of behavior and internal mental processes, as well as the practical application of acquired knowledge about psyche.

Psychology covers a lot of important topics about psychological issues, concerned with human feelings, beliefs, actions, and biological issues, examines how we act in groups, including how we treat each other and feel about each other, concerned with the functioning of the nervous system in order to understand the diversity within our field, understand each person as an individual.


Why do we do the things that we do? Why do we feel the things we feel, or say the things we say? Why do we find one person attractive and another person obnoxious? Why some people are happy most of the time, while others seem unhappy? Why do some children behave properly, or learn easily, while others do not? Questions like these all fall within the scope of psychology.

Thus, Psychology defined as the scientific study of behavior and mental processes.

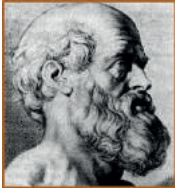
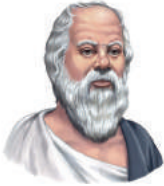



1.2 History of Psychology

Main role of historical development of scientific psychology is to extend the subject of psychology and create scientific knowledge about psyche and behavior. Table 1 illustrates main historical background of development of Psychological science.






Table 1 Main stages of History of Psychology






Date	Psychologist (s)	Main psychological ideas, contribution etc.
Ancient period		
570-500 BC	<p>Pythagoras</p> 	<p>The soul, immortal, indestructible and repeatedly incarnate in living beings in accordance with certain numerical laws.</p>

Continued Table 1

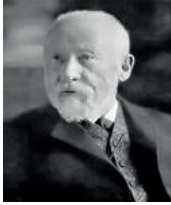




460-377 BC	Hippocrates 	The doctrine of temperaments According to his description, type of temperament depends on the balance in the human body of various fluids: blood, bile and lymph.
469-399 BC	Socrates 	Idea of epistemology which describe human knowledge, its origin, nature
428-348 BC	Platon 	Role of nature in psychological development. Three parts of soul: appetitive, spirited and rational.
384-322 BC	Aristotle 	Idea of Para Psyche Psyche is the primary reason of the body existence Three types of soul: the plant soul, animal soul and human soul Human soul relate with ability to think and create new things.
Development of psychological thought in the Middle Ages and the Renaissance		
350-430	St. Augustine 	The First Western Psychologist considered introspection as a method of study the soul. As a neo-platonist, Augustine describes philosophy and theology of the soul, motivations of infants, dreams etc.






Continued Table 1

1225-1274	St. Thomas Aquinas 	Specifies the term «reflection» by describing it as the successive phases of getting knowledge about world.
1452–1519	Leonardo da Vinci 	Leonardo da Vinci considered the system of basic emotional states such as affects that person can experience
Development of Psychology in Modern Period		
1642-1726	Newton 	Main requirement of experiment in science. The physics of relationships. Relation of motion with interpersonal relationship Role of Emotions in human interactions
1561-1626	Francis Bacon 	The traditional division of a rational soul and unsustainable irrational soul Two accounts of human mind: Medical-physical account which determed human beings Behavioral account which determined character and human performance
1596-1650	Rene Descartes 	The soul was associated with thinking ability. The basis of behaviour is a reflex of Psyche and body dualism



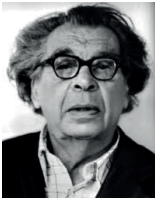


Continued Table 1		
1646-1716	G.V. Leibniz 	The unity of all mental processes. Analyse the importance of unconscious for human being
1632-1704	J. Locke 	Idea of Tabula Rasa as a blank psyche of newborn
1588-1679	Thomas Hobbes 	Idea of association as a relation between mental images and representation Human motivation and need of power
1801-1887	Gustav Fechner 	Psychophysics Psychological sensation and physical stimulus
Psychology as a science		
1832-1920	W. Wundt 	He established the first experimental psychological laboratory. This event marked the emergence of the experimental method in psychology, and in 1879 was the birth year of scientific psychology. Then criticism of introspection as a method was developed because by introspection it was impossible simultaneously perform an action and to analyze.




Continued Table 1

1833-1911	W. Dilthey 	Human science. Method of understandings
1842-1910	W. James 	Stream of consciousness
1850-1909	H. Ebbinghaus 	Experiment of memory processes
1878-1958	J. Watson 	Behaviorism approach: Stimulus – Reaction formula
1880-1943	M. Wertheimer 	Gestalt psychology

Continued Table 1		
1856-1939	S. Freud 	Psychoanalysis
XX century 1915-2016	D. Bruner 	Cognitive psychology
1928-2012	and U. Neisser 	
Russian and Soviet psychology (beginning of XX century)		
1849-1936	I. Pavlov 	Principles of Classical Conditioning
1889—1960	S.L. Rubinshtein 	The principle of «Unity of Consciousness and Activity»

Continued Table 1

1896-1934	L.S. Vygotsky 	The Cultural-Historical Approach in Psychology. Theory of Higher Mental Functions
1903-1979	A.N. Leontiev 	Theory of Activity
1904-1984	D.B. Elkonin 	The concept of leading activity
1930- 1998	V.V. Davidov 	The theory of developmental education
Psychology in Kazakhstan		
1910-1962	T. Tazhibayev 	General Psychology and Pedagogic Psychology in Kazakhstan

Continued Table 1		
1920-1985	M.M. Mukanov 	Founder of scientific psychological school in Kazakhstan, the developer of the historical and ethnic concepts in modern psychology.
1929-	K.B. Zharikbaev 	Problems of History of psychology in Kazakhstan, Ethnic psychology and ethnic pedagogy
1950- 2014	S.M. Dzhakupov 	Psychology of Cognitive Activity. Psychological structure of the learning process, The author of Theory of Jointly-Dialogic Cognitive Activity, Experimental Ethnic Psychology

Let us analyse general stages of extending psychological knowledge and changes of subject of Psychology during the sciences' historical development:

First stage

Accumulating non-scientific knowledge about human and his relationship with the world surround him



Second stage

Considering the soul as the subject of Psychology during the time of philosophical and religious thought



Third stage

Regarding Descartes' ideas consciousness became as the subject of Psychology



Fourth stage

Knowledge about deep area of the psyche and human desires change the subject of Psychology to unconscious



Fifth stage

Conducting experiments contributed Responses of the body as Subject of Psychology

Understanding of psychology of science was not formed at once. The process of its formation took place in four stages.

1st stage (V century BC) is the subject of study was soul. Ideas about the soul were both idealistic and materialistic. The idealist Plato believed the soul is immaterial, invisible, immortal, and the materialist Heraclitus and Democritus believed that soul depend from material substrat. Further, materialism was prohibited by foundation of the religion (until the XVII century). During this period, the soul came as a distinct entity which independent from body. René Descartes (1596-1650) developed dualistic approach where the soul was associated with thinking ability and reflex as a basis of behavior.

2nd stage (XVII century) was marked by the rapid development of psychology as a science. It was understood such concepts as ability to feel, to desire, to think. Method of studying consciousness was introspection, as self-observation. Within introspective psychology in 1879 in Leipzig by Wilhelm Wundt (1832-1920) established the first experimental psychological laboratory. This event marked the emergence of the experimental method in psychology, and in 1879 was the birth year of scientific psychology. Then developed criticism of introspection as a method because by introspection was impossible simultaneously perform an action and to analyze it.

3rd stage (nineteenth century) the subject of psychology was changed to behavior. American scientist John Watson (1878-1958), etc.). developed powerful scientific direction in American psychology, which was called behaviorism. The behavior was explained by the nature of the stimulus that causes a reaction (behavior). At this time, there were several attempts to explain the behavior by not only stimuli, but also other factors. Therefore, was developed other basic psychological concepts:

Gestalt Psychology by Wolfgang Kohler (1887-1967), Max Wertheimer (1880-1943);

Psychoanalysis and neofreudianism by Sigmund Freud (1856-1939), Carl Gustav Jung (1875-1961), Alfred Adler (1870-1937) (the subject is unconscious);

Cognitive psychology by Ulrich Neiser, Jerome Bruner (subject is study of cognitive processes);

Genetic psychology by Jean Piaget (1896-1980) (subject is development of thinking).

The foundations of scientific psychology are also laid in the late XIX – early XX centuries by establishment of “Reflexology” (V.M. Bekhterev (1857-1927), B.G. Ananyev (1829-1905) etc.).

4th stage (the twentieth century) is marked by the emergence of the dialectical materialist concept in domestic psychology, which was based on the philosophical theory of reflection of P.P. Blonsky (1884-1941), K.N. Kornilov (1879-1957).

One of the most important trends that emerged in the since 1920 till 1930 years, was the “cultural-historical theory”, developed by L.S. Vygotsky (1896-1934), then the psychological theory of activity developed by A.N. Leontiev (1903-1979).

Humanistic Psychology was developed the by Carl Rogers (1902-1987) Abraham Maslow (1908-1970) (subject is personality).

5th stage. Currently, there is integration of different areas. Psychologists use concepts and methods of one or another direction depending on the peculiarity of problems and challenges. A unified view on the subject of psychology does not exist.

The subject of domestic psychology is psyche and mental activity. However, definitions of this concept are formulated in different ways.

Thus, subjects of psychology are:

- 1) The psyche as a property of highly organized matter (the brain) to reflect the objective reality and regulate individual’s activities and his behavior;
- 2) Patterns, trends, peculiarities of development and functioning of the human psyche;
- 3) Facts, regularities and mechanisms of the psyche;
- 4) Structure of individual’s mental activity and the processes of its relationship with reality.

Today the subject of Psychology is not the concept of the soul, but the scientific study of the Psyche, Psyche and Behavior. Moreover, the current object of Psychology is patterns of occurrence and development, as well as the manifestations of the Human Psyche. In addition, the object of Psychology also is cognitive processes and the mental qualities of human as a biosocial system.

The current definition of the psyche: the Psyche is a property of highly organized matter that is actively and adequately reflects objective reality.

1.3 Mental Phenomena

Psychology studies a wide variety of psychological phenomena. All mental phenomena are divided into next groups:

1. Mental processes are elementary psyche phenomena, providing the primary reflection and awareness of environment stimulus, lasting from fractions of seconds to tens of minutes or more. As a rule, they have a clear beginning and a definite ending. In general, mental processes characterized as a living, very plastic, continuous, emerging and evolving process, which generates certain results (for example, feelings, images, mental operations, etc.).

Mental process is an act of mental activity that has its object of reflection and its regulatory function. Mental processes are orientational-regulative components of activity.

Mental reflection is the formation of an image of the conditions in which the activity it carried out. Mental processes are roughly regulating components of activity.

Mental processes are always included in the more complex types of mental activity. All mental States are divided into four types:

1. Motivational (desires, aspirations, interests, desire, passion).
2. Emotional (the emotional tone of sensations, emotional response to reality, mood, conflict emotional state – stress, affect, frustration).
3. Volitional state – initiative, dedication, determination, perseverance (their classification is associated with the structure of a complex volitional action).
4. State different levels of organization of consciousness (they are manifested in various levels of care).

Mental processes are shorter than mental states. They are short-term responses to the situation and are determined by the content of consciousness.

2. Mental states are longer in comparison with the mental processes (this may take several hours, days or even weeks) and more complex in their structure and formation. They determine the level of health and quality of human mental functioning in each time. These include, for instance, active or passive states, cheerfulness or depression, health or fatigue, irritability, absent-mindedness, good or bad mood.

Mental state is a temporary peculiarity of mental activity, as determined by its content and the relation of man to this content.

Mental states are relatively stable integration of all mental manifestations of a person at a certain interaction with reality. Mental States are manifested in the General organization of the psyche.

General functional level of mental activity is one of the most important

parameters of mental status is. This level is influenced by many factors. For example, it may be the conditions and duration of activity, level of motivation, health, strength and even character traits. A hardworking man is able much longer to maintain a high level of activity.

Mental states are a common functional level of mental activity, depending on the conditions of human activity and his personal characteristics.

Mental states are the results of long-term effects on the psyche of any external or internal stimulus. They can cause, for example, painful emotional sphere changes such as lethargy, depression, or alternatively, the state of the affect. Therefore, self-regulation is very important for human, which allows him to control his mental state.

Mental state is a temporary peculiarity of mental activity, as determined by its content and the relation of man to this content.

The mental state can be transient, situational, and stable.

All mental states are divided into four types:

1. Motivational (desires, interests, passion).
2. Emotional (the emotional tone of sensations, emotional response to stimuli, mood, conflict emotional state – stress, affect, frustration).
3. Volitional state is initiative determination of behavior. Its classification is associated with the structure of a complex volitional action.
4. Different levels of consciousness organization.

3. Mental formations are psyche phenomena, which generated during life experience. Mental formations form as the result of the human psyche activity and include the acquisition of knowledge, skills, habits, attitudes, opinions, beliefs, and others.

4. Mental properties of the person are such phenomena that differentiate the behavior of one person from the conduct of another for a long period of time. If we say that such and such a person loves the truth, then believe that he very rarely fails, in a variety of situations he tries to get to the truth. If we say that man loves freedom – assume that he doesn't like the restrictions of their rights, and so on.

Mental properties are most stable and consistently manifested personality features and provide specific qualitative and quantitative level of human behavior. These include orientation (What does human want?), temperament and character (How human manifested?) and capacity (What human are able to do?). They exist at least a sufficiently long period.

Mental properties of individual are sustained mental phenomena that significantly affect human activities and mainly characterize socio-psychological side. In other words, they are mental phenomena that are implemented in a particular society (or social group in relationship with other people). Their structure consists of orientation, temperament, character and abilities.

Orientation is a complex mental property, which is a relatively stable unity of needs, motives and goals of the individual, defining the nature of its activities. Its content based on internal motives. This is because human activity always subjectively defined and expressed everything that requires satisfaction.

As a complex mental property of the individual, the orientation has its own internal structure, including the needs, goals and motives.

5. Social-psychological effects are psychological phenomenon is caused by the interaction, communication and mutual influence of people on each other and their belonging to a certain social communities (classes, ethnic groups, small and large groups, religious denominations, etc.).

A type of mental phenomena, which is defined by most foreign psychologists, is illustrated in the Figure 1.3.1.

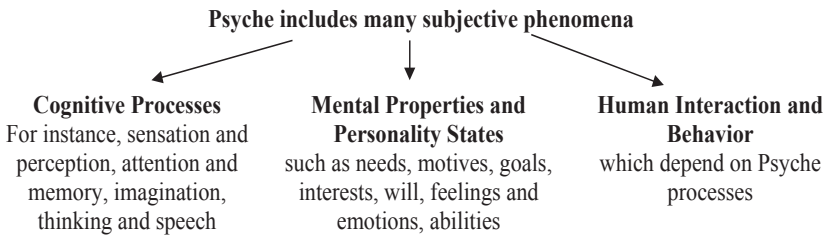


Figure 1.3.1 Mental phenomena

Cognitive processes help to search, detect and memorize environment stimulus. Human lives and works, performs certain actions in order to meet their own physical, social and other needs. It becomes possible to understand and explain human behavior regarding concepts of “Cognitive Processes”, “Personality” and “Communication” (Figure 1.3.2).



Figure 1.3.2 Human activity

All three concepts closely connected with each other in human activity in order to adapt to the environment.

However, it is necessary to study each concept in Psychology separately

to understand their psychological features and structure. That is why main chapters in the content of the Handbook named by these main parts of human activity.

Psyche is also a subjective image of the objective environment, which arises during the process of human and environment interaction. It exists because of the function of the brain that allows reflecting the impact of surrounding objects on human.

Content of Psyche is determined by environment stimulus that reflecting in the psyche of people in the form of Mental Processes, Mental States, Mental Formations, Mental Properties and Social-Psychological Effects, thereby making the world of mental phenomena.

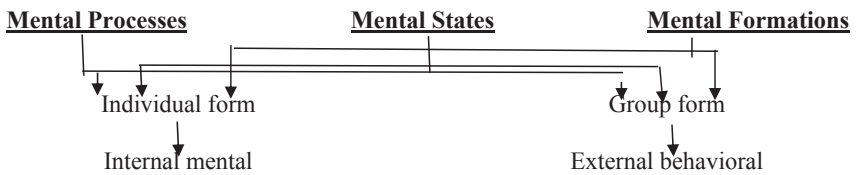


Figure 1.3.3 Types of mental phenomena studied by Psychology

Mental Processes, Mental States, Mental Formations, Mental Properties and Social-Psychological Effects are allocated only for study purposes in Psychology. In fact, they act as a system unit and are mutually transformed into each other. For example, Mental Processes that often manifest can become as a habit of Personality trait. The states of cheerfulness and activity sharpen attention and sensation, while depression and passivity lead to distraction, or even cause premature fatigue.

Thus, *Psychology* is the science about consistent pattern of human psyche development and manifestations.

Psyche is a property of the brain, providing human ability to reflect the impact of environment stimulus. Psych as a subjective image of the objective environment, arises in the process of human interaction with its environment and other people.

Psyche is inherent not only too human, but also to animals. It varied in its forms and manifestations and includes, firstly, conscious, i.e. sensation and perception, attention and memory, representation and imagination, thinking, feelings and experiences, communication and behavior, motivations and intentions that are compose subjective, completely controls human's inner world and which are manifested in actions, in the relationship and interaction with other people. In general, human consciousness is the highest stage of psyche

development. It is the product of social-historical development of people interaction and the result of psyche improvement during activity and performance.

Psychology also studies the phenomena such as the *unconscious, consciousness, personality, activity and behavior*.

Definition

1. Unconscious relating to any process or content of the mind of which the individual is not aware at a particular moment in time. 2. In Freudian psychology, the region of the mind, which contains actively repressed materials such as memories, impulses, desires, and conflicts, which are not accessible for the conscious portion of the mind? 3. In Jungian psychology, the unconscious is divided into the collective unconscious, which contains the inherited structures and potentialities of mind, and the personal unconscious, which contains weak and repressed memories, thoughts, and feelings as well as personal ways of understanding created by the individual during his/her lifetime in the form of complexes. 4. In general usage, any part of the mind outside the awareness of the individual.²

The Unconscious is a form of automatically reflection of environment, which is not available to introspection. Reflecting environment merges with human experiences in unconscious.

Definition

***Consciousness* the phenomenon of personal, subjective experience. The experience is sensory, remembered, or imagined in nature and interacts with environment and physiological states so as to produce changes in the state or aspects of subjective experience.³**

Behavior is the external manifestations and immediate actions of human mental activity.

Definition

***Behavior* all the activities that living organisms exhibit. Some research strategies limit the definition of behavior to those fitting a priori categories, which may be more or less well defined.⁴**

² The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 559

³ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 129

⁴ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 78

According to domestic psychologist S.L. Rubinshtein, behavior is a special form of activity: it becomes behavior precisely when the motivation of actions from the objective plan passes into the plan of personal-social relations. Both these plans are interrelated: personal-social relations are realized through object relations. Human behavior has natural preconditions, but it is based on socially conditioned activity mediated by language and other sign-semantic systems. Communication is a typical form of activity. Behavior depends on relationship with groups, such features of group as norms, value orientations, and role prescriptions⁵.

The main tasks of Psychology as a science are the following:

1) The study of the formation of laws and regularity about development and manifestations of mental phenomena and processes as a reflection of immediate effects of objective reality and human interaction;

2) The study of qualitative (structural) characteristics of mental phenomena and processes;

3) The study of the physiological mechanisms, which determine mental activity;

4) Systematic applying of scientific psychological knowledge in order to improve humans' activity and their interaction with other people (development of scientific and practical methods of training and education, rationalization of the labour process in different types of human activity).

5) Development of scientific recommendations to improve human stress stability skills and reliability of its certain mental functions in solving professional and other tasks in different circumstances of life and activity.

The purpose to study Psychology is to understand the human internal (mental) world with its all diversity and dynamics.

In modern conditions, Psychological knowledge enables people to understand better him, promotes effective communication, improves the quality of training and education, strengthens family relationships, etc.

1.4 Branches of Psychology

Academician B.M. Kedrov put Psychology in the centre of "Triangle of Science" (Figure 1.4.1). On the top of the triangle are placed the natural sciences, on the lower left and lower right corners are placed the social sciences and philosophical sciences (logic and epistemology) respectively. In this triangle, Math is located between natural and philosophical sciences. Between natural and social sciences is placed the Technical science. Psychology also

⁵ Rubinshtein S.L. Fundamentals of General Psychology. - St. Petersburg: 2007. - 720 p. P. 29

occupies a central place that combines all three groups of sciences. Therefore, Psychology on the one hand, acts as a product of all the other sciences, and on the other hand acts as a possible source of explanation of development these sciences.

Psychology is closely linked with the social sciences that study human behavior. The social sciences include Psychology, Social Psychology, Sociology, Political Science, Economics, Anthropology and Ethnography. With this group of sciences related other disciplines: Philosophy, History, Cultural Studies, Pedagogy, Aesthetics etc. They all belong to the Humanities sciences. Among the Humanities disciplines, Pedagogy has most profound connection with the Psychology. Psychology is also closely related to the natural sciences, especially Physiology, Biology, Physics, Biochemistry, Medicine and Mathematics. At their junction the related areas are: Psychophysiology, Psychophysics, Bionics, Medical Psychology, Neuropsychology, Pathopsychology, etc.

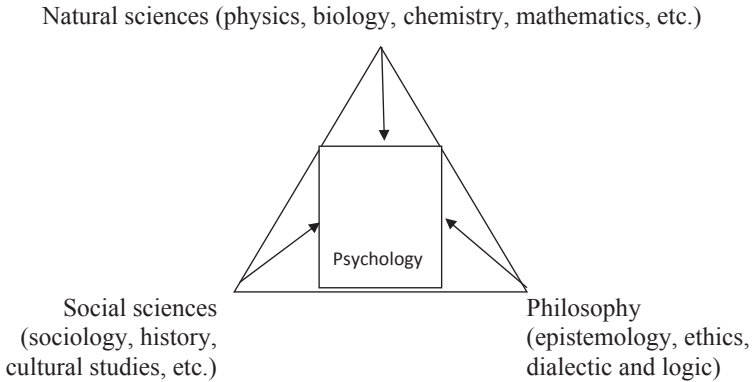


Figure 1.4.1 “Triangle of Science” by B.M. Kedrov

Thus, Psychology is a science, which is related to the socio-humanitarian and scientific knowledge that determines its role in the foundation of the sciences. Psychology integrates data from these branches of scientific knowledge and, in turn, affects them. In this case Psychology is giving a general explanation model of Human. Nowadays, the historical mission of Psychology is to be the integrator of all spheres of Human knowledge and the basis of developing general Human theory. Mission of Psychology is combining natural and social sciences into a single concept in order to study Human being.

Recently Psychology enhanced relation with the Technical sciences, which gives related subjects: Engineering Psychology, Ergonomics, Space and Aviation Psychology, etc.

Psychological science combines both theoretical and applied disciplines, and has been developing between the Natural Sciences, Social Sciences and Humanities. The reasons for this development may be different. On the one hand, applied practical issues of human activity encourage the development of new psychological disciplines, such as Engineering Psychology, Space Psychology, Educational Psychology, etc. There are practical (empirical) reasons for the development of Psychology. On the other hand, the Psychology includes new methods of research and knowledge. In particular, the use of physical methods in Psychology gave rise to the emergence of Experimental Psychology, Psychophysics. In turn, the application of Physiology methods in Psychology formed Psychophysiology; the introduction of mathematical methods resulted in development of Mathematical Psychology, Engineering Psychology, and Bionics. This cognitive (epistemological) causes branch of psychological sciences. Modern psychological science is a multidisciplinary field of knowledge and includes about 100 relatively independent areas.

Common to all branches of Psychology is that they learn the facts, patterns and mechanisms of the Psyche in different conditions and at different levels of development.

General Psychology is the core branch of modern Psychology, which studies the most general laws, regularity and mechanisms of the Psyche that includes theoretical concepts and experimental studies.

General Psychology includes four main areas:

1. General theoretical area that helps to understand the origin and functions of psyche;
2. Cognitive Psychology (Psychology of main cognitive processes, such as sensation and perception, memory, thought and speech, imagination);
3. Psychology of the Regulatory Process (Psychology of Emotion and Motivation, Psychology of Will);
4. Personality Psychology.

General psychology is the fundamental basis for all branches of Psychology.

Branches of Psychology are classified and differentiated according to several criteria:

1. By studying the psychological problems of Personality Development:

Development Psychology studies the psychological characteristics, patterns and mechanisms of the human being changes during lifespan. It also examines current problems of cognitive, social personality changes across time, Personality development dynamics, relation between human age and possible assimilation of knowledge, Psychology of old age or Gerontopsychology. Development Psychology relates and includes number scientific areas of Psychology such as:

- a. Individual Differences and Differential psychology examine individuals

differences in their behavior, age and gender differences among people, as well as the differences in biogenetic and social-cultural factors of human development;

b. Comparative psychology studies similarities and differences in psyche development of many different species from insects, animals, primates, to Human. One of the areas of Comparative Psychology is Animal Psychology.

c. Genetic psychology studies the hereditary mechanisms of human psyche and behavior, their dependence on genetics.

d. Health Psychology studies psychological and behavioral processes in health, illness. Also Health Psychology is related with Stress Psychology and Psychology of Stress Management.

e. Psychology of Abnormal Development deals with unusual patterns of human behavior, emotion and thought in clinical context. This area includes Medical psychology as application of psychological theories, psychotherapy to the practice of medicine, studies psychological features of patient behavior, issues of developing psychological treatment and Psychopharmacology, ways of correcting violations and disturbances. Medical psychology also includes areas of scientific knowledge from Neuropsychology. Neuropsychology studies relationship between behavior, emotion, thought, mental disorders and brain functions.

f. Clinical psychology integrates clinical knowledge for the purpose to understand dysfunctions in psyche and human behavior, as well as occurring during various mental changes of disease. Clinical Psychology as a separate area includes Path psychology that studies variations in mental development, mental decay in various forms of brain pathology.

2. By studying the psychological problems of Human learning:

Educational psychology studies cognitive and behavioral patterns during Personality learning and educational processes. This branch of Psychology studying the problems of individual differences of intellectual, gifted learners, classroom management, active learning techniques and effective methods of individual education, training activities, relation between improve learning outcomes and learning skills, ascertain the psychological factors that influence on learning process's success, Educational psychology includes for instance areas such as:

1. Teaching psychology deals with the problem of the relationship in the system of "Teacher and Student", teacher characteristics and student learning.

2. Learning Psychology examines effects of experience, learning environments on long-term changes in behavioral potential.

3. By studying relationship between the individual and society:

Social psychology studies how Human psyche, Behavior and Personality at

all with its' self-esteem processes, individual attitudes and others traits that are influenced by society with its' social processes and social norms, relationships of individuals with other people existing in large and small social groups. Social psychology examines also social-psychological phenomenon in large groups, problems of mass communication, mechanisms of media influence on different people communities, the problems of psychology classes, nations, and the public mood. In Social Psychology, there are a lot of scientific research of social-psychological phenomena in small groups, problems of psychological compatibility, interpersonal relationships in groups, cohesion of the group, leadership problem, conflict relationship and its' management.

a. Forensic and Legal Psychology as one of the parts of Social Psychology studies relation between Psychology and justice system in society. Legal psychology studies the psychological features of criminal human behavior.

4. By studying the psychological problems of specific types of human activity:

Industrial/Organizational Psychology examines the psychological characteristics of work motivation and attitudes, work place and well-being, effectiveness of performance. Industrial/Organizational Psychology divided in number areas such as:

1. Engineering Psychology studies human interaction with technology and also defines psychological features of human behavior and its capabilities applied to equipment and computer technologies;
2. Aviation Psychology challenging by improving flight performance, performance of pilots etc.
3. Space Psychology examines the psychological characteristics of human spaceflight.

Psychodiagnostics (gr. «psyche» – the soul, «diagnostikos» – able to recognize) a field of psychology, developing methods for detecting and measuring individual psychological characteristics of personality. Psychological testing associated with quantitative assessment and precise qualitative analysis of psychological properties of personality using the scientifically proven methods that give reliable information about them. Psychological testing involves the diagnosis, prediction, correction and prevention.

Psychotherapy is the process of therapeutic effects on individuals' psyche or group behavior. According to V.N. Myasishev main task of psychotherapy is to change the individual's personality by awareness of causes of his psychological issues and restructuring his relationship in order to get well-being.

Counselling psychology aimed to identify, clarify and resolve individual's problems in exact situation. The business initially focused on mentally healthy people, able to take responsibility for their actions.

Psychocorrection relates to mental functions in order to treat them by rehabilitation psychological training.

Parapsychology (gr. para – near) is the designation of hypotheses related to mental phenomena, which explanation is not strictly scientific. Parapsychology describes so-called extrasensory perceptions, such as telepathy, clairvoyance, etc.

There are a lot of other current areas of Psychology which have been developing in such huge paths like Cognitive Science and Neuroscience. These paths are related with new psychophysiological equipment such as FMRI, EEG, Eye Tracking and others and with computer technology. Today Psychology becomes a part of the Cognitive Science (see Figure 1.4.2).

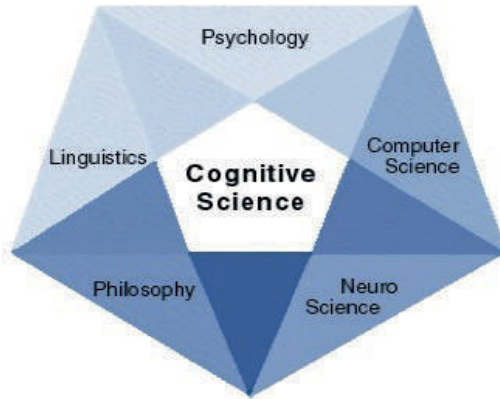


Figure 1.4.2 Cognitive science and its branches⁶

Definition → **Cognitive science is the interdisciplinary science of mind which includes and attempts to integrate approaches from psychology, linguistics, philosophy, anthropology, computer science, and physiology.**⁷

Definition → **Neuroscience is an interdisciplinary approach to the study of the nervous system that includes anatomy, biochemistry, cognitive modeling, pharmacology, and physiology.**⁸

Nowadays is still existing one of the discussion area like Parapsychology, which studies mechanisms of unusual “paranormal” human abilities, such as telepathy, precognition, telekinesis.

⁶ http://www.ncku.edu.tw/~iocs/en_US/about/background.php

⁷ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 117

⁸ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 336

Thus, modern Psychology is characterized by differentiation process, it generates substantial branching in the individual sectors, which are often various far apart and are quite different from each other, although they retain a common subject of study – the facts, laws, and mechanisms of the psyche.



Figure 1.4.3 Branches of Psychology⁹

1.5 Methodological Principles of Psychology

Each science is developing dynamically and progressively because scientists' creative ideas put forward by using sufficiently objective, accurate and reliable methods which allowing testing these ideas. Before considering the general features of the methodology, consider the concept of fact. What is a psychological fact?

According French scientist Claude Bernard, a fact has value only through the idea which it is associated with. For example, as a psychological fact it may be a specific act of the child's behavior, which manifests the characteristics of his personality. If we observe a group of children, then as a psychological fact there may be acts of group work, communication between children etc.

However, the observation of certain psychological fact is not enough. It is significantly necessary to interpret scientific data in psychology by methodology of scientific research. In this regard, the question of development of the methodological basis of psychology still has been developing as one of the

⁹ <http://www.slideshare.net/GenPsyche/1-ba-branches-of-psychology>

most important for the science. Methodology (as methods – way of research, logos – science) is a system of principles and ways of organization and construction of theoretical and practical knowledge, as well as teaching about this system. Methodology is the doctrine about the scientific method and about the methods of particular Science.

The study of modern psychology is based on several principles that allow describing the object of study, processing empirical data, and interpreting it.

As the main methodological principles of psychology are:

1. The principle of unity of consciousness and activity. Consciousness and activity are in continuous unity, but they are not identical to each other. Consciousness effects activity, forming its inner plane and vice versa. The implementation of this principle in psychological research is as follows: the psyche is invisible; therefore, it must be identified by any indicators such as actions of the subject, speech, behavior, facial expressions, pantomime, which are the manifestations of consciousness.

2. The principle of development (genetic conditions). Psyche can be properly understood only by process of continuous development of it and by result of such activities. In each scientific psychological research of mental phenomena must include a description of this principle.

3. The principle of determinism. Application of this principle in psychological research means that the psyche is caused by external and internal conditions of existence. This principle exists especially in empirical research, because it is related with necessity to explain the causal relationships of variables with other certain internal or external factors.

4. Systemic principle in psychology (from the Greek, «system» is composed of parts, Union) is a methodological approach to analyze of mental phenomena, when the phenomenon is considered as a system, irreducible to the sum of its elements with the structure. Regarding this principle developed the Gestalt psychology and psychoanalysis.

The most important postulate of the systemic principle in psychology states that all mental processes are organized in a system, where elements acquire new properties, set its integrity.

Systemic analysis consists with searching structure-function relationship between system components and elements, studying of its levels and systemic factors, unity of organization and functions, stability etc.

5. The principle of objectivity means that researcher and research methods do not affect research results. The implementation of this principle in experiment means that it is necessary for example, to safe anonymity of objectives and outcomes of study make research in natural test conditions.

1.6 Methods of Psychology


By Methods, scientists receive scientific data in order to use it for further construction of scientific theories and applied knowledge.

Method gives possibility to achieve scientific goal, solve a particular psychological problem etc.

Methods of Psychological research vary by sources of data, tools that are used to get scientific information, collect way of qualitative or quantitative data or both etc.

The main basic methods in Psychology are observation and experiment.

Observation. It is purposeful and systematic description of behaviors, events, chosen for psychological research.

 **Observational method is any scientific approach which involves recording information without interference with the subject or process under scrutiny. This approach is often used in developmental psychology, ethology, and social psychology.¹⁰**

Main features of scientific observation are:

1. Focusing on scientific goal;
2. Selectivity in observing of certain behaviors and activities;
3. Balanced by certain scientific plans;
4. Systematic.

There are also different types of observation:

- Short-term observation;
- Longitudinal observation (sometimes it takes several years);
- Continuous observation by monitoring all mental processes, personality traits etc.;
- selective observation by monitoring one or several mental processes, personality traits etc.;
- Participant observation when observer becomes a member of the study group;
- Nonparticipant observation when observer externally studies an object of observation;
- Introspection by observing ones' own psychological features;
- Non standardized observation has no pre-established plan of study, flexible possibility to change the subject or object of observation etc.;
- Standardized observation has scientific scheduled plan of study etc.

Observation procedure consists of the following processes:

¹⁰ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 344

- 1) Set goals and objectives of observation;
- 2) Find object and situation for observation;
- B) Select type of observation and collect necessary information;
- 4) Define methods of registration of observation data;
- 5) Data processing and interpretation of observation data.

Experiment. It is manipulating of independent variables to determine their effect on dependent variables in psychological research.

Definition

Experiment is an arrangement of conditions and procedures which allows observations of the relationships between the controlled circumstances (independent variables) and the uncontrolled outcomes (dependent variables) with an intent to make inferences about causal relationships between the independent and dependent variables.¹¹

Types of experiments:

1. *Laboratory experiment.* It takes place in labs with special conditions by using special equipment.

2. *Natural Experiment.* This type of experiment proposed by Russian scientist Alexander F. Lazursky in 1911. A natural experiment allows studying individual behavior in real environment. A natural experiment is widely used in different fields of Psychology. For instance, in the Social Psychology, Educational Psychology etc. Natural experiments allow getting accurate information about individuals' behavior, but cannot be carried out repeatedly since losing their naturalness and secrecy from subjects.

3. *Psychological-Pedagogical Experiment.* In this experiment conducted directly processes of training or education by which examine for example individuals' learning characteristics.

Psycho-pedagogical experiment usually consists of three stages and types:

1. State experiment. It is aimed to study actual state and the level of certain features of mental development at the time of the experiment.

2. "Forming" experiment. During this experiment, training or educational situation is organized for active developing of hypothesized behavioral patterns.

3. Control experiment allows checking the efficiency of learning processes, by analysis and comparison of results.

Auxiliary methods:

Conversation. It is collecting data about mental phenomena by direct or indirect, oral or written form of receipt of information.

¹¹ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 196

Types of conversation:

- Standardized conversation is related with setting goal of study with strict instruction and exact order of conversation questions.
- None standardized conversation. In this type of conversation, an experimenter has only a general plan and order of conversation questions depending on conversation process.

The conversation requirements:

1. Develop questions related with exact research aims;
2. Ease;
3. Necessary to create a friendly environment.

Psychologist plays an active role in organizing and conducting the conversation and control process of taking clear, complete answers on each question from participant.

Psychological test is standardized instrument used to measure individual's psychological characteristics such as traits, intelligence, certain conditions, feelings etc. Each standardized psychological test includes such parameters as validity and reliability.

Psychological analysis of activities' products such as drawing, writing essay etc. allow getting quality information about psychological characteristics of individuals, their motivation, skills, attitude, and sometimes the level of knowledge and ability.

Projective test as a type of psychological analysis of products of activity is aimed to study individuals' characteristics. Ambiguous stimulus of the test reveals hidden motives, emotions and other traits of personality. Traditionally, projective tests are most reliable, but their standardization parameters are not as great as personality questionnaires or psychological test. For many projective techniques is fundamentally important role of a psychologist-diagnostician. Ppsychologist has a certain freedom in its interpretation. Therefore, for such techniques value the experience and professionalism, impartiality is difficult to overestimate.

Biographical method is aimed to identify the key factors of individual's development and life experience, the crisis periods of development, socialization features. By this method also analyse current life events and psychological time of individual etc.

Biographical method of research aimed at identifying the lifestyle of the individual, the type of adaptation in the environment. It used path life of personality for both analysis and correction.

In recent years, method of psychological simulation becomes widely used in psychological research. Mental phenomena are expressed by models as artificially constructed objects or even environment. By computational

modelling, it is possible to create models of social behavior, model of each cognitive processes etc.

Thus, only the integrated use of various methods of psychological research can provide a complete, objective data about psychological characteristics of psyche. Each method has its advantages and disadvantages, so in order to get significantly true information they must be used in certain number of tests. Only in this case, researcher can get objective assessment of psyche, behavior and personality.

Control questions:

1. What is the role of philosophical ideas of antiquity in the modern psychology?
2. What is the fundamental difference between the philosophical and psychological ideas of understanding psyche?
3. Explain subjective phenomena of Psyche.
4. Analyze subject of psychology throughout historical development.
5. Give your example of unconscious and consciousness.
6. Describe a human behavior.
7. Compare branches of Psychology.
8. Explain why Psychology became as science.
9. Explain why psychology is important for your professional activity.
10. Analyse differences between observation and experiment in Psychology.

CHAPTER 2. PSYCHE AND CONSCIOUSNESS

2.1 Brain and Psyche

Psyche is a property of highly organized living matter, consisting in the active reflection of the objective world by the subject through the construction inseparable from his worldview and the regulation on the basis of behavior and activities.

Function of the psyche providing adaptation of a living organism to the environment through reflection of reality, providing the integrity of the body, regulation of behavior and activities.

Domestic physiologist I.M. Sechenov and I.P. Pavlov explained functioning of the Psyche by Reflex Activity of the Brain. He believed that the brain by Reflex Activity (lat. "Reflection") arise organism's response on stimuli coming from the external environment and the internal organs. All the facts of conscious and unconscious life are reflexes. Thus, mental activity occurring in the brain is the result of converting the signals from the external and internal environment.

Domestic psychologist A.R. Luria based on own research data suggested the theory of Vertical Brain Regulation, which explains peculiarities of the psyche. He identified three brain units:

1. The First Block is called an Energy Block or Tone Block. It is located deep in the brain, and includes particularly hypothalamus, thalamus and reticular formation. Processes occurring in neurons of the Block provide irritation in order to get wake. If irritation disappears, individual falls into a drowsy state, and then falls asleep. So, the First Block provides energy and brain power of the organism.

2. The Second Block of the human brain is located in the posterior portions of the cerebral hemispheres (the occipital area, parietal and temporal divisions). This is Reception Block which is processing and storing external information. Different parts of the Second Block perform certain functions. For instance, the occipital area is responsible for the visual work; parietal area is responsible for tactile-motor activity, and temporal area is responsible for auditory vestibular activities.

3. The Third Block is located mostly in frontal lobe of the brain. This Block responsible for programming, regulation and control of human activity. The Third Block allows building and maintaining individual's intention, to create a program of actions and regulate them.

Thus, mental activity occurring in the brain is the result of converting the signals from the external and internal environment.

For the first time the role of the frontal lobes was noted by scientists after

the incident with the senior team master Gage. He injured his head with a crowbar, which has passed through the left cheek and came around the crown. There were damaged frontal lobes. Within an hour, Gage was in a stunned state, and then was taken to the hospital. After recovering from an injury, Gage lived during 12 years. All this time, he remained as capable person. However, there have been observed personality changes. Before the accident, he was considerate, well-balanced man, after accident, he became unrestrained, rude, stubborn and indecisive. In this regard, most researchers believe that frontal lobes damage relates to personality change.

Some features characterize functional organization of the human brain. The idea is that the human right and left hemispheres perform different functions. This was revealed in 1960, in laboratory of Roger Sperry was carried a surgery which called “Split Brain”. During the surgery, fibers of the corpus callosum connecting the two hemispheres were separated. The result was discovered so-called “functional asymmetry of the brain” that allows to define functions that are performed by the left and right hemispheres separately.

Thus, the main functions of the left hemisphere of the brain are speaking, reading and counting. The main functions of the right hemisphere are orientation in space, recognition of complex objects (human faces), musical tones and melodies. Also, dreams are a product of right hemisphere of the brain. The left hemisphere of the brain is the basis of logical thinking and the right hemisphere determines intuitive thinking. Hemispheric dominance, which exists in human brain, is characterized by activity of one of the hemispheres. Hemispheric dominance determines thinking processes and individual behavior.

Pavlov and the Conditioned Response



Figure 2.1.1 Ivan Petrovich Pavlov (1849–1936) Pavlov (center) in his laboratory, with some colleagues and his experimental subject.¹²

¹² <http://sandwalk.blogspot.com/2009/09/nobel-laureate-ivan-pavlov.html>

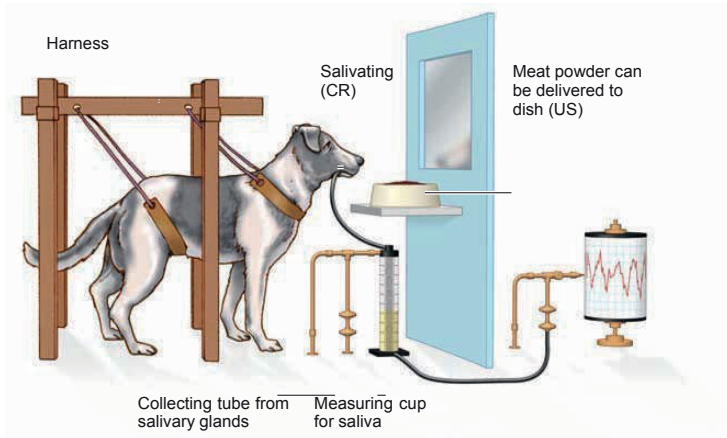


Figure 2.1.2 Experiment of I.P. Pavlov¹³

I.P. Pavlov in his classical experiments with dog identified two types of responses:

- Unconditioned response as a biologically determined reflex;
- Conditioned response as a product of learning in which organism learns to create relationship between two of more stimuli.

2.2 Development of Psyche

According to A.N. Leontiev and C. Fabri, psyche occurred through several stages during biological evolution¹⁴:

Table 2.2 The stages of development of psyche in phylogenesis

Stages and levels of psyche development, its characteristics	Behavioral features associated with this stage and level	Types of living creatures that have reached this level of development
<p><i>I. The stage of the elementary sensory psyche</i></p> <p>A. The lowest level. Primitive elements of sensitivity. Developed irritability.</p>	<p>A. Clear reactions to biologically significant stimulus through changes in speed and direction of motion. Elementary forms of movement. Weak plasticity of behavior. Weak, non-purposeful motor activity.</p>	<p>A. Protozoa. Many lower multicellular organisms living in an aquatic environment.</p>

¹³ Gleitman H., Gross J., Reisberg D. Psychology. – 8th ed. ISBN 978-0-393-93250-8. – New York, London, 2011. – 263 p.

¹⁴ A.N. Leontiev. Problems of development of the psyche., 1981.

Continued Table 2.2

<p>B. Highest level. Presence of sensations. Appearance of the most important organ of manipulation – jaws. Ability to form elementary conditioned reflexes.</p>	<p>B. Clear reactions to biologically neutral stimuli. Developed motor activity. The ability to avoid adverse environmental conditions, active search for positive stimuli.</p>	<p>B. Higher (ringed) worms, gastropods (snails), some other invertebrates.</p>
<p><i>II. Stage of the perceptive psyche.</i></p> <p>A. Low-level. Reflection of external reality in the form of images of objects. Integration, combining the impacting properties of stimuli into a holistic image of object. The main organ of manipulation is the jaw.</p> <p>B. High level. Elementary forms of thinking (problem solving).</p> <p>C. Highest level. The ability to solve the same problem by different methods. The transfer of the once found principle of problem solving way into new conditions. Immediate consideration of cause-effect relationships between stimuli.</p>	<p>A. Formation of motor skills. Genetically programmed components predominate. The motor abilities are very complex and diverse (diving, crawling, walking, running, jumping, climbing, flying, etc.). Active search for positive stimuli, avoidance of negative (harmful) stimuli, protective behavior well developed.</p> <p>B. Highly developed instinctive forms of behavior. Ability to learn.</p> <p>C. Specialized organs of manipulation: paws and hands. Development of research forms of behavior by using previously knowledge, skills and habits.</p>	<p>A. Fish and other lower vertebrates, some higher vertebrates (arthropods and cephalopods). Insects.</p> <p>B. Higher vertebrates (birds and some mammals).</p> <p>C. Monkeys, some other higher vertebrates (dogs, dolphins)</p>
<p><i>III. Stage of intelligence</i> Complex reflection of reality, ability to establish relationships between objects such as more-less, shorter-long, less often, more often etc., distinguish geometric shapes. Highest stage of intelligence.</p>	<p>Through trial and error, they can solve any problematic situation. Features of human Psyche.</p>	<p>Higher animals. Human being.</p>

2.3 Difference between Human Psyche and Animal One

The difference between the animal psyche and human psyche consists primarily in terms of its development. The animal develops according to the laws of biological evolution. However, humans' psyche development depends on social and historical laws.

Table 2.3 Differences between human and animal psyche

Comparison Settings	Animal Psyche	Human Psyche
1. Phylogenesis	Biological evolution	Cultural and historical development
2. The factors of mental development in ontogenesis	Biological	Socio-cultural and socio-psychological
3. Form of Activity	Instinctive and search behavior	The purposeful and conscious activities, general or individual
4. The nature of the activity	Directly connected to the biological needs of the organism and the particular characteristics of the situation	Indirect socio-cultural experience
5. Regulators of activity / behavior	Instincts, unconditioned and conditioned reflexes	Knowledge, social norms, traditions and cultural values, and symbolic sign systems.
6. The nature of self-regulation	Mostly involuntary, unconscious self-regulation	Voluntary: Conscious self-control, will
7. Information exchange with the environment	The first signal system in the form of sensations: the information about the world enter to the brain from the senses system	The second signal system: external information comes in the form of words; signals are signs of language.
8. The form of communication between the same species or between individuals	Nonverbal: expressive movement, sound signals	Verbal and sign language, a system of signs and meanings.
9. The level of development of mental functions	Lower/natural (genetically programmed) mental functions	Higher / indirect (due to culture) mental functions

Continued Table 2.3		
10. The nature of the intellectual / mental activity	The beginnings of visual-motor and spatial visualization ability, the ability to solve complex (duplex) activity in specific problem situations	Verbal and logical (verbal and indirect) conceptual thinking, the ability to generalization and abstraction

2.4 Consciousness as the Highest Form of Mental Development

Consciousness is the highest level of mental reflection of objective reality, as well as the highest level of human self-regulation as its' social being.

It is a generalized by purposeful reflection of reality, in the meaningfulness of human behavior and pre-vision of its results, as well as controlling. The psyche is formed from the first days of life, constantly evolving, enriched, improved by external social experience. For example, if the animal grows isolated from the usual conditions, it will save all own species' quality, but if Human from his birth is isolated from society, he will not get any qualities inherent in people. History has a few cases, when the human child was fed by animals. There were no signs of consciousness (thinking and speaking) among such children. Even more they had no human physiological properties such as walking erect. Human psyche is significantly affected by social consciousness, which includes science, morality, religion, art, law, ideology etc. Changes in society consciousness also reflected on individual consciousness.

The main characteristics of consciousness are:

Consciousness contains the external information and internal knowledge.

Knowledge as a basis of consciousness is related with a complex of emotional experiences, intentions and interests.

The distinction between subject and object, separate self-condition from not-self one (self-presence).

The human consciousness is active. Activity is not only the form of reflection, but also the ability to transform and change the environment.

Human consciousness directly is related with the language as a system of signs and with ability to speak.

Ability to self-assessment, assessment of its actions. According to Hegel, "man is an animal, but he was not an animal, because he knows that he is an animal. Self-consciousness manifests itself in Informative (well-being, self-observation, self-reflection, self-criticism), emotional (mood, self-esteem, humility) and volitional (self-restraint, self-control) forms.

The provision of purposeful human activity. Due to ahead reflection human get ability to reveal causal relationships, provides future aims, motives and takes into account strong-willed decisions, making the necessary adjustments, to overcome difficulties. The presence of emotional evaluation of external and internal stimulus, event etc. Emotional experiences enhance the clarity of information comprehension come from environment.

2.5 Structure and Content of Consciousness

One of the first ideas about the structure of consciousness belongs to Sigmund Freud. According his Psychoanalysis approach, psyche has a hierarchical structure and includes the unconscious, pre-conscious and conscious states. The first two states are part of the Nonconscious. S. Freud's idea about psyche is one of the types of structuring of consciousness.

By studying the structure of individual consciousness, A.N. Leontiev identified its three components:

Sensual basis of consciousness is a form of sensual composition of inner images about concrete objects from the environment. Inner images vary in their modality, sensuous tone, degree of clarity, a greater or lesser stability, etc.

Meaning is content which associates with a particular expression (word, sentence, diagrams, maps, drawings, sign etc.) of a language belong to one human culture with similar historical path.

Personal Meaning reflects the subjective importance of certain events for the human interests and needs. It creates a bias of human consciousness.

For example, all children would like to get a good mark. The mark "Five" is common to all of them because of evaluation standards of learning process. However, for one of them the "five" is an indicator of his knowledge and abilities, for another child the "five" is a fact that he is better than others, for the third is a way to achieve the promised gift from the parents, etc.

The discrepancy between personal meanings creates difficulty in understanding. According L.S. Slavina, so called "Semantic Barrier" exists in cases of misunderstanding among people, that arising due to different personal meanings.

By studying younger students, L.S. Slavina was looking for reasons why some children are impervious to influences from the teacher. Studying younger pupils, she was looking for reasons why some children are completely immune to the influences of the teacher. It turned out that this is largely due to the fact that the requirements for the child requirement are for a completely different personal meaning than for the teacher.

For example, the teacher asks question, trying to figure out what he knows, or even “pull” student for the best mark, but the student believes that teacher finds fault with him. The semantic barrier can occur not only between teachers and students, but also between the parents and their children, between adults etc.

All of these individual consciousness components together create the complex human psyche.

The content of consciousness:

- Direct images that get from the environment;
- Emotional experience;
- Thoughts;
- Ideas.

2.6 Functions of Consciousness

There are several functions of consciousness:

1) Cognitive functions are the formation of representations of reality by means of thinking, memory, and feelings;

2) Cumulative functions follow from the cognitive one. In the human consciousness over time are accumulated knowledge, experience, emotions, and experiences, acquired because of their own experiences;

3) Evaluation functions allow comparing human needs and interests with those of the outside world and developing self-knowledge and self-esteem;

4) Focus function is related with human desire to identify individual goals and ways of achieving them;

5) Creative functions help to form new ideas and concepts by thinking and imagination;

6) Communicative functions serve for communication between people;

7) Time-forming function. Consciousness is responsible for the formation of an integral awareness about past, present time and an idea of the future;

8) The managerial function of consciousness in order to control individual behaviour;

9) Reflexive function of consciousness is associated with self-consciousness and reflection about individual’s own thoughts and actions;

10) The regulatory and evaluative function of consciousness in order to regulate of individual’s own behavior based on assessing external situations. Consciousness takes part in emotions and feelings processes;

11) The value-orientation function, through which a person assesses the phenomenon of reality, determines his attitude towards them;

However, there are a lot of classification of functions of consciousness depend on its theoretical explanations.

Thus, Consciousness is the highest, integrating form of the psyche.

According to A.N. Leontiev, the human language meanings and collective activity play a major role in the formation of human consciousness.

L.S. Vygotsky, exploring the mechanisms of formation of higher mental functions (thinking, consciousness, self-awareness), noted that the consciousness development in human society was carried out in the course of social interaction between people.

L.S. Vygotsky suggested the cultural-historical theory of the human psyche in order to find scientific solution to the problem of human psyche development¹⁵. In this theory analysed the reasons of significant differences between the human psyches from animals psyche. In his opinion, human has learned to create inventions by cultural tools. Regarding this human psyche is developed and human learned to master their own mental functions, to govern themselves. The most common system of signs is human speech and language.

Consciousness as the highest form of mental activity allows the individual to maintain internal integrity and consistency, irrespective of changes in the situation. Moreover, consciousness is expressed in the continuity of time a person experiences. He remembers the past, experiencing the moment, plans. Motivations and results of human actions are comprehensible to him due to this form of the psyche. Personality is able to assess themselves and others, engage in self-improvement and self-development, if it is necessary.

Human activity and communication dictate the structure of consciousness. In psychological terms, consciousness serves primarily as a process of human understanding of the world and himself. Consciousness and self-consciousness are inherent only to human, but not in any condition. Self-consciousness is absent in the new-borns, in some categories of individuals with mental disorders etc. Consciousness and self-consciousness are active that gives for individual the ability to voluntary control its' behavior. With regard to the consciousness of the people, it does not passively reflect the surrounding reality, but also changes the world.

2.7 Consciousness and Unconscious

Conscious human activity does not exclude the presence in it of the unconscious. As a rule, the individual is aware of own motives and goals, but often performs this activity automatically.

¹⁵ Vygotsky L.S. Selected psychological research. - M., 1956.

Walking, speaking, writing, reading, counting are the most organized automatic mental activity. First, these acts are carried out by direct consciousness activity, and then these acts turn to automatically base without consciousness control.

However, the automation is relative. Consciousness at any moment can take control of any automated action. In such cases, the unconscious becomes an important mechanism for adaptation to the environment.

Subjective reactions are also mostly unconscious because they are predefined subliminal stimuli, such as hallucinations, dreams, etc.

Unconscious manifestations in the human psyche are incomparable with the animal psyche, because they, like consciousness, are determined by social conditions of human existence.

There are various explanations of the unconscious manifestations. So, S. Freud believed that the unconscious is repressed, unrealized human needs. He introduced the concept of “Id” caused by the pleasure principle and “Ego” based on principle of reality. Actions of “Ego” correspond to reality and social attitudes. The “Id” is guided by the subjective needs of the biological and affective nature.

There is no clear line of separation between the “Id” and the “Ego”, because mental activity is characterized by constant transitions through the conscious to the unconscious, and vice versa.

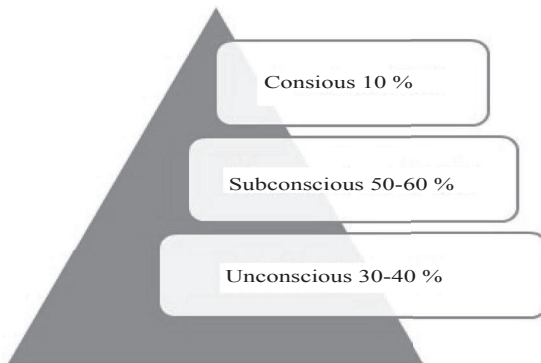


Figure 2.7 Structure of psyche by S. Freud¹⁶

Dream is an example of such transition between the conscious and the unconscious. There are three kinds of sleep: the daily sleep; sleep deprivation which leads to the destruction of neuron cells; sleep, which occurs under the

¹⁶ <http://journalpsyche.org/understanding-the-human-mind/>

influence of a uniform stimulus (for example, during a monotonous lecture); and sleep habits.

Sleep is a special state of the cerebral cortex, which is accompanied by complex biochemical transformations.

Sleep occurs when the higher parts of the central nervous system (cortex), and even mid-brain are slowed. Sleep plays an extremely important protective function of preventing exhaustion.

The dream is a kind of state of psyche of individual who is asleep, which is characterized by the appearance of more or less bright images. They arise because of uninhibited areas of the cerebral cortex. Therefore, dream is based on the experience that already has been experienced before, which are connected to each other in different ways, even fantastic or absurd connection. M.I. Sechenov figuratively defined dreams as an unprecedented combination of already experienced impressions.

External stimuli are also included in a dream, without disturbing sleep. For example, if it is hot in bedroom, individual can see summer in dream.

The brain continues to work during sleep. For instance, D.I. Mendeleev during sleep discovered the periodic system in chemical science, Kepule saw in his dream a formula of benzene etc. However, these discoveries are not accidents but the results of previous hard work of the brain.

During sleep, there are so-called “sentry points” as uninhibited or less inhibited areas of the brain cortex, which are in a state of activity in order to communicate with the outside world.

Neuron cells of “sentry points” not completely inhibited, and they are in so-called paradoxical phase in which they are more sensitive to weak stimuli than to strong one. The animals also have a “sentry points”. Regarding them, for example, bats sleep upside down and do not fall.

The interesting thing is that there is no correspondence between the duration of the events that unfold in his sleep and duration of sleep. Individual can see the long dream during sleep just a few seconds, and vice versa.

Definitely, dream interpretations which are given in the dream books, primitive, but at the same time, the content of dreams often give for psychologists, psychotherapists, neuropsychiatrists valuable information about individual, his condition, needs and problems. Analysis of the nature of dreams helps to understand the cause of nervous disorders, to identify trauma etc.

An individual can also sleep by suggestion or self-hypnosis (hypnotic sleep). A state of deep hypnotic sleep, during which individual performs a variety of unconscious movement, called somnambulism. In connection with certain abnormalities in the brain individual also can sleep for a long time (even decades). This type of dream is called as lethargic dream.

The transition from sleep to active wakefulness is the transition from unconscious to conscious mental activity. Thus, the human mental activity is a unity of conscious and subconscious states.

Human behavior is determined not only by its consciousness. Individual's self-organization as adaptation pattern to the environment is realized by three relatively autonomous levels of mental regulation:

1. Evolutionary formed unconsciously instinctive level.
2. Unconscious-subjective and emotionally impulsive level.
3. Conscious, arbitrary, logical-semantic level.

In the socialized behavior dominated arbitrary, value-categorized program. Two other, lower levels of self-control in his behavior perform background role. In extreme conditions, and also in conditions of individual de-socialization, these lower levels of self-control may go offline mode of operation.

The presence of these levels of regulation in the human psyche causes the relative independence of the following types of human responses and actions:

1. Unconscious, instinctive, innate reactions (fear response, fear, and avoidance of physical hazards).
- 2) Habitually automated subconscious action.
- 3) conscious-volitional actions.

Thus, consciousness plays significant role both in external and internal balance.

Altered states of consciousness:

- hypnosis;
- meditation;
- drug action;
- state before death.

Traditional Western psychology distinguishes two states of consciousness. They are sleep and wakefulness. The way we are aware of the outside world, varies throughout the day, change the ability to perceive and process signals. The relationship between the activation level and effectiveness is described by the Yerkes-Dodson law: behavior will be effective if the excitement level will be close to optimal, it should be neither too high nor too low. At a low level of activation readiness of individual to action gradually reduced, and soon he falls asleep, at high level of activation, individual's behavior can be disorganized.

2.8 Consciousness and Self-Awareness

The essential feature of human consciousness is self-consciousness. By realizing the items of own activities and its relationship to other people, individual becomes aware of own self.

Awareness about own behavior, physical features, mental characteristics are related with the content of consciousness. By separating from objective reality, individual starts to change own behavior in accordance with the society requirements in order to develop Self-awareness.

Self-awareness is manifested in self-observation, critical attitude to themselves, self-control and social responsibility for own behavior.

Self-awareness – a holistic integrative, conceptual reflection of individual about own personality.

Human directs and regulates their activities based on their self-concept, which is due to the social conditions of existence of individual's social identity (reference of itself to a particular social group).

Control questions:

1. Explain main relationship between brain and psyche.
2. Compare Stages of Psyche development.
3. Explain main Differences between Human and Animal Psyche.
4. Describe main characteristics of Consciousness.
5. Define structure of individual consciousness.
6. Analyse Structure of Psyche by S. Freud.
7. How knowledge about Consciousness relate with your profession?
8. Analyze main contribution of theory of D.N. Uznadze to development of psychology about Consciousness.
9. Make comparison between L.S. Vygotsky's and A.N. Leontiev's ideas about Consciousness.
10. Describe factors that determine an individual's behavior.

CHAPTER 3. PSYCHOLOGICAL BASIS OF ACTIVITY

3.1 Concept of Activity in Psychology

The “Activity” also is significant scientific category with other basic psychological concepts such as “consciousness”, “person”, “communication”. The “Activity” has the status of scientific concept and even interdisciplinary categories. Activity is the subject of study of many sciences: philosophy, sociology, physiology, engineering disciplines, psychology.

Activity is a form of active relationship between human and environment in order to achieve goals, create of socially significant values and get social experience.

Activity is related with purpose connected with individual needs.

There are other also important general psychological features of activity:

Objectiveness of activity. The objects of the external world do not act directly on individual, but merely being transformed during activity.

Subjectivity of activity. Activities are always socially determined. Therefore activity is linked to the language, social roles and norms. Subjectivity of activity is expressed by all human experience, motives that determine the direction and selectivity of action.

Adaptability of activity is a feature, which gives possibility for individual to transform activity due to several changes in its conditions.

Systematic activities. The activity appears not only by sum of its components, but also by its organized integrity.

According to S.L. Rubinstein, individual and his psyche are developed by activities. Psyche objectively exists primarily as extremely dynamic, plastic, flexible, continuous, never initially and not fully defined process.

Psyche always formed only in individual interactions with the external world. Therefore, psyche in this condition is constantly changing and evolving, ever more fully can reflect the dynamism of reality and thereby participating in the regulation of all activities.

3.2 Psychological Theory of Activity

In science, there is no single approach to the disclosure of the concept and structure of human activity. Traditional psychology has made a major contribution to the methodological and psychological solution to this problem.

Activity is a specific form of social life of people, by which transform the natural and social reality.

The problem of activity is linked with the problem of personality and

consciousness. Personality is formed only in the activity. The activity defines psychological features of individual, but only individual chooses the form activities which determines its development (A.G. Asmolov)¹⁷. During the activity individual interacts with the environment, and this process is not passive, but active and controlling by consciousness.

“Activity approach” is a theory considering psychology as a science of the functioning and structuring of mental reflection during activities.

The psychological theory of activity was created in Soviet psychology and has been developing for over 50 years. It is fully revealed in the works of domestic psychologists such as L.S. Vygotsky, S.L. Rubinstein, A.N. Leontiev, A.R. Luria, A. Zaporozhets, P.J. Halperin and many other psychological theory of activity began to be developed in the 1920s – early 1930s. By this time, the psychologies of consciousness were at the peak of new foreign theories such as behaviorism, psychoanalysis, Gestalt psychology, and several others. Thus, Soviet psychologists could already take into account the positive aspects and disadvantages of each of these theories.

But the main thing was that the authors of the theory of activity have adopted the philosophy of dialectical materialism such as the theory of Karl Marx, and especially its main thesis for psychology that is not the human psyche which determines its existence and activity, but on the contrary, the existence and activity is determined by consciousness. This general philosophical thesis found specific psychological development in the theory of activity.

The most complete theory of activity is presented by of A.N. Leontiev, particularly in his latest book “Activity. Consciousness. Personality”¹⁸.

For Leontev, “activity” consisted of those processes “that realise a person’s actual life in the objective world by which he is surrounded, his social being in all the richness and variety of its forms” (Leontev 1977). The core of the Leontev’s work is the proposal that we can examine human processes from the perspective of three different levels of analysis. The highest, most general level is that of activity and motives that drive it. At the intermediate level are actions and their associated goals, and the lowest level is the analysis of operations that serve as means for the achievement of the higher-order goals.¹⁹

The concept of activity’s structure not completely exhausts the theory of activity, but constitute its foundation. Human activity has a complex hierarchical structure. It is composed of several layers or levels. There are levels of activity, moving from top to bottom:

¹⁷ Asmolov A.G. Psychology of Personality: principles of general psychological analysis. – M.: Sense, 2001. – 414 p.

¹⁸ Leontiev A.N. Activity. Consciousness. Personality. - M.: The book on demand, 2012. - 130 p.

¹⁹ https://en.wikipedia.org/wiki/Aleksei_N._Leontiev

1. The level of action;
2. The level of operations;
3. The level of psycho-physiological functions.

The level of action is the basic unit of analysis of any activity. By definition, the action is a process aimed to achieve a goal of activity. Thus, the definition of the action includes another concept that it is necessary to define. It is a “Goal”.

What is the goal? It is an image of result that must be reached in the process of action. Note that goal is an image of a conscious result. Image of result held in the minds of all time, while the action is carried out, so goal is always conscious. Is it possible to do something, without imagining the result of activity? Definitely it is impossible.

The following four points are describing the concept of “action”.

1. The action includes an essential consciousness component by setting goals and retention of it. However, this act of consciousness is not close in it, but revealed in action.

2. Action also is an act of behavior. Consequently, the theory of activity also keeps achieving of behaviourism about study of external activity in animals and humans. However, unlike behaviorism it regards external movement in indissoluble unity with the consciousness, because the movement without a goal is failed behavior.

Thus, the first two points are made in the recognition of indissoluble unity of consciousness and behavior. This unity lays in the main unit of analysis the “Action”.

3. Concept of “Action” in activity theory asserts the principle of activity, contrasting it with the principle of reactivity. The two different principles are starting points of activity analyses:

- a) According J. Watson, reactivity exists in the external environment of organism (subject). The reaction (from the Latin “actio” – action) means a response. J. Watson believed that through reactions, psychologists can describe human behavior, but evidence showed that many of the behavioral acts or actions cannot be explained solely on the basis of the analysis of environmental conditions. Any reaction on external stimuli is mostly an action aimed to achieve the objectives by taking into account external conditions. It is appropriate to recall the words of Marx that man for the purpose is the law that defines the method and nature of his actions. Therefore, the psychological theory of activity affirms the principle activity through the concept of action.

- b) The concept of action allows manifestation of human activity in the objective and the social environments. Anything can be as results of action. For example, not only biological objects can be as results of action. For example, obtaining food, avoiding danger, and so on. In this case, it could be the production of a material and social products, for instance, social contact establishing, acquiring knowledge etc.

Thus, the concept of “action” makes possible to come up with a scientific analysis of human activity. Such an opportunity could not be provided by the concept of response, which came from J. Watson. Human in the light of the Watson’s system acted mainly as a biological entity.

The concept of action reflects the basic assumptions or principles of activity theory, the essence of which is as follows:

1) Consciousness cannot be regarded as closed system itself: it must be displayed in the activity of the subject (it is necessary for “opening” the circle of consciousness);

2) The behavior cannot be considered in isolation from human consciousness. In examining the behavior must not only be preserved, but also define its fundamental functions (principle of unity of consciousness and behavior);

3) Activity is an active, purposeful process (active principle);

4) Human actions are objective one; they implement social and cultural aims (the principle of objectivity of human activity and the principle of its social conditioning).

Next lower layer of activity is operation. The operation is a way to perform an action. A few simple examples will help to illustrate this concept.

1. Multiply two-digit numbers in the mind, or in written form. These are two different ways to perform the same arithmetic operation, or two different operations.

2. “Female” way of threading a needle thread is that the thread is pushed into, but men tend to bearing down eye of a needle on the thread. This operation is also different, in this case the motor.

3. To find a specific place in a book, usually we use a bookmark. However, if the tab is dropped, it is necessary to resort to another method of finding the right paragraph: either try to recall the number of exact page, or leafing through the book’s pages in order to find right paragraph etc. There are again, a number of different ways to achieve the same purpose.

Operations describe the technical side of the implementation of action, and what is called “appliances”, agility, dexterity, that refers almost exclusively to the level of the operation. The nature of the operations depends on the conditions in which the action takes place. Thus, the conditions intended to be external circumstances and opportunities or the internal funds of individual.

Speaking about the psychological characteristics of the operations it should be noted that their main feature is that they are little understood or not understood at all.

Thus, according to the theory of activity:

1) Operations are of two kinds: one arises by adaptation of applying or direct imitation; others are from actions by their automation;

2) The operation of the first kind is practically not recognized and cannot

be called in the mind even when apply special efforts. Operations of the second kind are on the border of consciousness and can be easily understood if they are important for us;

3) Every complex action consists of actions and operations.

Last, the lowest level in the structure of the activities constitutes a psycho-physiological function. Speaking of that entity operates, we must not forget that this subject is at the same time is an organism with a highly nervous system, developed senses and complicated musculoskeletal system.


Under the psycho-physiological functions in the theory of activity understood the physiological maintenance of psychological processes. These include a number of abilities of the human body: ability to feeling, formation and fixing traces of past actions, motor ability, etc. According this in active theory are distinguished sensory, mnemonic and motor functions respectively. This level also includes innate mechanisms enshrined in the morphology of the nervous system, and those that mature during the first months of life. The boundary between operations, automatism and psychophysiological functions is conditional enough, however, despite this, the last stand in a separate level because of their organismic nature. They exist in activity at the beginning.

The psychophysiological functions at the same time make the necessary prerequisites and means of action. Physiological features are the foundation of organic basis of activity. Without relying on them, it was impossible to perform the actions, operations, but also the formulation of the tasks.

Thus, the three main levels in the structure of activity such as actions, operations and psycho-physiological functions are operational and technical aspects of the activity.

3.3 Motivational and Personal Aspects of Activity

The stream of consciousness and all its contents includes emotions, images, and the perception of the external and internal worlds. There are the processes, which underlie behavior and all the phenomena of experience. Any product of the psyche, such as judgments, attitudes, knowledge, opinions, and beliefs is the original form of the activity of living organisms.

 **Need is anything necessary for the survival of an organism. The desire for anything necessary for the survival of an organism. A desire for some particular thing, activity, or state necessary to the experienced well-being of an organism, as in the need for creativity or play.²⁰**

²⁰ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 328

Needs analysis is best to start with their organic forms. Periodically there are certain states of tension associated with the lack of an objective substance of living body, which are necessary for the continuation of the normal functioning of the body. These states are the objective needs of the organism in something lying outside his constitute a prerequisite for its normal functioning. Therefore, these states called as needs. These are the need for food, water, oxygen, etc. When it comes to the requirements with which a person is born (and not only man, but also the higher animals), then this list is necessary to add at least two more basic biological needs: social need (need to contact with others,) and especially with older individuals, and the need for external impressions (cognitive demand).

The subject needs are often defined as a motive. Motive is something for which the action takes place.

 **Motive reasoning for doing something. Motive causing movement or action.²¹**

Set of actions, which are caused by one motive, is called as “activity”, and more specifically is called as special activities or special activity.

As examples of special activities usually give a game, learning, labour. The word “work” was fixed for these forms of activity, even in everyday speech. However, the same concept can be applied to a host of other human activities, such as caring for the child’s upbringing, sportsmanship or solving major scientific problem.

Level of activity is clearly separated from the action level, since one and the same motive can be satisfied with a set of different actions. However, the same effect can be encouraged by different motives.

Actions specific subject is usually encouraged by several motives. Multi motivation human action is typical phenomenon. For example, a person may work well for high quality results, but simultaneously satisfies his other motives such as social recognition, financial rewards etc. in this case or function, not all motives, “converging” on one activity equivalent. As a rule, one of them is major, others – minor. The main motive is called leading motive, secondary motive is called motive-stimulus. Motive-stimulus not so much “launch” as further stimulates this activity.

Due to the problem of the relation of consciousness and motives, it is necessary to note that the motives generate action, or lead to formation of goals

²¹ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 319

and objectives, which usually aware. Therefore, all motives can be divided into two classes: the conscious motives and the unconscious motives. Conscious motives can serve important life goals, which guide human activities over long periods of his life. These motives are goals. Such motives characterize mature individuals. Class unconscious motives are much more, and before attaining a certain age, there are almost all the motives exist in personality.

Work on the realization of self-motivation is very important, but at the same time is very difficult. It requires not only great intellectual and life experience, but also a lot of courage. In fact, this is a special activity that has its motive such as motive of self-knowledge and moral self-perfection.

Unconscious motives, as well as conscious motives appear in consciousness, but in special forms. Such forms are at least two: the emotions and personal meanings.

Emotions arise only in relation to such events or results of actions that are associated with the motives. If a person is worried about something, then it is “something” involves his motives.

The theory of activity emotions are defined as a reflection about the results of its activities to the motive. If the terms of motive activity is successful, there are positive emotions if unsuccessful – negative.

Emotions are very important indicators that serve as the key to unlocking human motives (if they are not understood). It is only necessary to notice exact reasons of their appearance. Sometimes, for example, a person who commits an altruistic act, feels a sense of dissatisfaction. It is not enough that he helped another, because his act has not yet received the expected recognition from others and it is disappointing. It tells the true sense of frustration, and, apparently, the main motive by which he was guided.

Another form of manifestation of the motives in the consciousness is personal meaning. This experience raised the subject of subjective significance, actions or events, caught up in the action of leading motive. It is important to emphasize that the only leading motive express personal meaning. Secondary motives (motives, incentives) act as additional motivators; they generate only emotions, but not the meaning.

Personal meaning is well-observed phenomenon in the transition of process, when a neutral object suddenly begins to be experienced as subjectively important. For example, boring geographical information is important and significant, if you plan to hike and choose the route for it. Discipline in the group begins to worry you much more if you are appointed as advisor.

3.4 Relation between Motives and Personality

Human motives form a hierarchical system. If we compare the motivational sphere of the person with the building, then the building will have a different form in different people. In some cases, it will be like a pyramid with a single vertex of leading motive, in other cases, the vertices or semantic motives may be several. The entire building can rest on a small base of egoistic motive or rely on a foundation of public interest motives, which include terms of human life. Depending on the strength of leading motives, the building can be high or low, and so on. The motivational sphere of a person is determined by the scale and nature of his personality.

Typically, hierarchical relationships motives are not fully understood by individual. They are clarified in situations of conflict between motives. It is common of confronts between different motives, requiring a person to make a choice in favour of one of them: the material benefit or interests of the case, self-preservation, or honour.

Development of motives. In the analysis of the activity, only one formula exists: need to motive, then motive forming to the purpose and activity of need – motive – purpose – activities. In real activity constantly the reverse is true: in the course of activity formed new motives and needs of “activity – motive – need”.

By the theory of activity was found a motives’ formation mechanism, so called “mechanism of shift of motive on target” (another option – a “mechanism of turning the goal to the motive”). The essence of this mechanism is that the goal previously encouraged to implement it in some motive, eventually becomes self-motivating force. By another words, goal becomes a motive.

It is important to emphasize that the transformation goal to motive can only happen in the accumulation of positive emotions: it is well known that it is impossible to create positive attitudes towards work by only punishments and coercion. The subject cannot become motive by the order even with very strong desire. He must go through a long period of accumulation of positive emotions. The last act is to enter into existing system of motives a new motive. An example would be a situation. The student begins to willingly engage in some subject, because he enjoys communicating with favourite teacher. But over time, it appears that the interest in the subject deepened, and now the student continues to have them for its own sake, and maybe even choose it as their future profession.

Internal activity. Development activity theory began with an analysis of human external, practical activity. But then it became necessary to analyse internal operations.

What is the internal activity? Imagine the contents of the inner work, which is called intellectual and which people are constantly engaged. This work is not always a proper thought process such as the solution of intellectual or scientific purposes. Often during these thoughts individual produces in the psyche of the upcoming actions.

The function of these actions is that domestic actions prepare external action. They save human effort, giving him the opportunity, firstly, accurately and quickly select the desired action, and secondly, to avoid grave and sometimes fatal mistakes.

With respect to these extremely important forms of activity theory put forward two main points:

1. Internal activity is an activity that has essentially the same structure as the external activity, and differs from it only in the form of leakage. In other words, the internal activities, as well as external, inducement, accompanied by emotional experiences, has its operational and technical support. The only difference is that the operation is performed with real objects and their images, and instead of the actual product obtained the result of a thought.

2. Internal activity occurred from the external, practical activities through a process of internalization, which is understood as the transfer of appropriate action in the mental plan. It is clear that for a successful product of the action “in the psyche,” it is necessary to master it in material terms and get first real result. For example, thinking through chess move is possible only after the real mastered the moves of figures and perceived their actual consequences.

It is also clear that the internalization of external activity, without changing its fundamental structure, greatly transformed. This applies especially to its operational and technical part: individual actions or operations are reduced, and some of them drop out at all; the entire process is much faster.

Can mental processes and functions to be described by means of concepts and theory of operations? Is it possible to discern them in the structural features of the activities? Definitely, it is possible. Soviet psychology for decades engaged in the development of the activity approach to these processes.

3.5 Structure and Types of Activity

The activity is a system that includes several components. A.N. Leontiev allocated such components as steps, operations, objectives, and other parameters of activity. Each of these components is presented at a particular level of activity. According to the Picture 1 there are four main stages of activity:

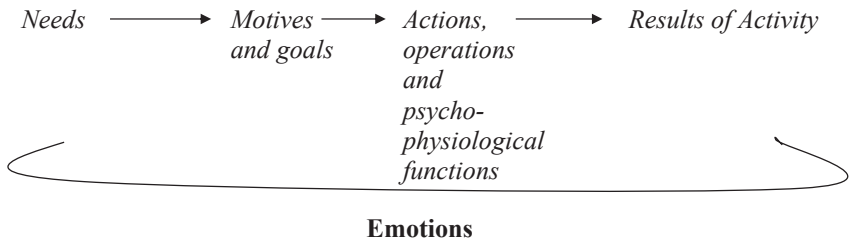


Figure 3.5 Stages of Activity

Need is basis of any activity. Needs is a situation in which individual must do something which is important for him. Regarding needs activity starts. According Maslow's classification fundamental human needs are physiological needs, safety needs, belongingness needs, esteem needs and self-actualization needs.

Motives. One of the tasks of psychological analysis of activity is to clarify the motives for which it is carried out. Motive explains individual psychological differences between people in the course of activities under similar conditions.

Goal of activity is achievement towards which efforts directed by motives.

Action and Operations are main body of performance of activity by human.

Results are outcomes of activity.

In this schema action is one of the key components of human activity, which is formed under the influence of a conscious result or goal. That action, its genesis, structure and function are the main subject of study in the psychological theory of activity. The structure of the action includes not only reactive and executive elements, but also the expression elements, such as sensitivity, memory, foresight and evaluation. In general, the action consists of three parts: the indicative, executive and controlling.

There are several reasons for the isolation of types of action. The form of mental reflection distinguishes sensory, perceptual, mnemonic, and other types of action. In compliance with various activities, such as emit gaming, education, work and other activities. According to the degree of development of action distinguish external and internal actions. The actions of the historical experience of mankind are fixed, the transfer is carried out in the process of communication between child and adult, as well as two or more adults are together.

The operation is one of the components of the activity defined by the terms of an action. The operation is a way to perform an action. The same operation can enter the structure of different actions.

The level of psycho-physiological foundations is different mental process forms of activity.

3.6 Types of Activity

Traditionally, the main types of activity include differentiation of activity on labour, training and playing activities. Work experience is different from the other two types that involve getting any socially significant product result. For playing and learning activities such result is not socially and individually significant. Finally, the most specific feature of the playing activity is that main motive appears in the process of activity, rather than in its result. These activities follow each other in ontogeny, and are indicated by the term “leading type of activities” for each of stages of age. Leading activity determines the new formation in the human basic psychological development at each stage of age.

The separation of individual and joint activities is also equally fundamental and common for psychology. Joint activity implemented so-called “collective subject”, where two or more people have a common motive and common purpose. Another important feature of the joint activity is spatial and temporal presence of the participants, their instrumental role differentiation, and availability manager who organizes joint activity. Joint activity is also internally heterogeneous and divided into sub-types: for example, directly joint activity “work together” and indirectly joint activity where exist “the separate activities of each number of group”.

The most traditional classification of activity is due to its subject area such as professional affiliation. So, there is a classification of professional activity developed by E.A. Klimov: “Human – Technology”, “Human-Human”, “Human – Nature”, “Human – Sign”, “Human – Artistic image”.

There are also distinguishing performing activity and management (organizational) activity. First is characterized by individual’s directly effects on object of activity, even if he is in contact with the other subjects. The second management activity usually does not provide such direct exposure. It is, however, necessarily involves organizing a stakeholder other people, as well as the hierarchy of subordination.

Activity is also classified to direct and indirect types regarding its applied features. In the first case, individual directly effects on object and immediately gets information from it. In the second case, information is transmitted to individual through the intermediate link: in tabular form on the screen or in any other form of signs. For example, the operator activity.

In Child Psychology, it is widely spread concept of leading activity. A certain type of dominant activity characterizes each age period.

The leading activity is an activity that defines development of the human major mental new formations in exact age stage. Leading the activity corresponds to the basic needs of the child.

Table 3.6 The periodization of child mental development

Period	Leading activity
Infancy	The emotional communication with the mother
Childhood	Subject-manipulative activity
Pre-school age	Role-playing games
Primary school age	Learning activity
Adolescence	Communication with peers
Senior school age	Learning-professional activity

The concept of leading activity was created by A.N. Leontiev, who singled out three features of leading activities.

Firstly, under the leading activity arise and differentiate new activities. Thus, in the role-playing game elements appear pre-schooler exercises – activities that will lead in the next primary school age.

Secondly, in the leading activity formed and rearranged some mental functions. For example, in the game there is a neoplasm pre-schooler as “imagination”.

Thirdly, the observed changes in personality depend on the leading activity. When a child plays in a game situation the relationship of adults, he develops peculiar adult standards of behavior.

The concept of leading activity and its determining role was developed by D. Elkonin in order to build periodization of mental development. The development is based on the sequential change of the leading activity, which in one age period provides the priority development of motivational and needs sphere. Changing the dominant activity is the transition to a new stage. The main mechanism in this case is shift motif on target, converting that acted as one of the goals of an independent motive.

Playing activity. Role-playing is an expression of the growing child’s communication with the public. In the role-playing game expressed child desires in his future adult life that cannot be immediately implemented because of the complexity of tools and their unavailability for the child (D. Elkonin). Ethnographic studies have shown that in primitive societies where children can take part in the early work of adults, there are no objective conditions for the emergence of the role-play the story. With three or four years, children learn tools and working with adults. By role-playing game, child develops its need-motivational sphere. Analysis of playing activities performed in the works of L.S. Vygotsky, A.N. Leontiev, D.B. Elkonin and others.

Consequently, there is a role-playing game in the course of historical development of society as a result of changes in the child’s place in the system of social relations.

The special sensitivity of the game to the sphere of human activity and human relations shows that the game is not only draws subjects from life; the game is social in its inner content, origin and nature (Elkonin).

During preschool childhood game becomes the dominant activity of the child not because of the game, but because it causes a qualitative change in the psyche of the child.

Game relation of children. During playing activity the child is not only replaces objects, but also takes on a role and begins to act in accordance with this role. Most often the child plays the role of adults such as mothers, educators, driver, and seller. The child tends to perform duties towards the people around him. Other children expect and require that he is properly performed this role.

The game's plot is reflected the reality of children's games. If the spheres of reality wider, the games wider and more. Therefore, the younger pre-schooler has a fairly limited number of subjects. With age increases the duration of the game. For kids it is important the action itself, and for the older children is especially important social hierarchy (who is more important), for the most senior is more important moral considerations.

The content of the game. The content of any game is the fact that the child stands out as the highlight of adult activity. For the first year of a child's life is typical trial game. It is finding, tentative actions with toys.

At the beginning of the second year there is another type of game. Child in their gaming actions with objects start to reproduce what he has learned by imitating adults (for example, feeding a doll).

In the middle of pre-school age (three to four years), relationships between people become the content of the game. The game becomes a subject-role one.

Subsequently, the content of the plot-role-playing game developed and enriched. Therefore, children of this age especially meticulously relate to the implementation of the rules.

Thus, the content of the game varies from subject to the action of human relations, and then proceeds to the rules governing the relationships between people. Age four to five years is considered the age of the game flourish. In six or seven years, the role is replaced, giving way to the rule; when children are able to organize their own game. Thus, the development of the game at the preschool age comes from games with a clearly defined role and covert rules to games with clearly defined rules and a hidden role.

The role of the game in the child mental development

Mental qualities and personal characteristics of the child develop intensely in the game activity. In the game are added other activities, which then acquire independent significance. Games activity influences the formation voluntary (conditional purpose) psychological processes. Therefore, the game begins to develop in children's attention and arbitrary memory. Conscious purpose, fo-

cused attention, memorization is easy to grow during the child's play. The very conditions of the game require the child to concentrate on the things that are included with the game, played out on the content of acts and scenes.

Game situation permanent impact on the development of child mental activity:

- Based on the action with the Vice-objects (spoons can play the role of a simple stick);

- Experience of real relationships gaming by child in the plot-role-playing games is the basis for develop a unique kind of thinking, allowing to stand the own point of view from other people, to anticipate their future conduct, to build their own behavior;

- Role-playing game is crucial for the development of imagination. The ability to replace items other objects to take on different roles is the basis for the development of imagination is the main new formation of pre-school age;

- The game promotes feelings and volitional regulation of behavior, as the game follows the rules. Fun activities impact entirely on the child's personality development.

Learning activities.

Admission to the school is the beginning of a new period for primary school age children. A child of six to seven years by expansion of cognitive interests, generated the need for training activities, and there is a need in the assimilation of theoretical knowledge. In the early school years learning activity is the main and leading among other types of children's activities. Performance of younger students determines the development of their major psychological new formation, primarily based on theoretical thinking. In the course of educational activity the child has a relationship to reality, which is associated with the formation of his relevant skills: reflection, analysis, planning. These abilities are psychological new formation of primary school age.

The result of learning activities is not to obtain the finished product, and the mastery of techniques and knowledge, which in future will provide any product. The main task of the primary school is to teach a child to learn.

3.7 Psychological Theory of learning Activities

Historically there was created separate theory of learning and theory of professional activity of a teacher. Thus, to distinguish between:

- Learning is individual's efforts to assimilate the material;

- Education is participation of others (teachers) in the organization of the learning process.

In Russian psychology, there are several psychological theories of learning developed by the leading psychologists of the mid XX century.

1. Associative theory (P.A. Shevarev).

The concept of associative learning is based on the concept of “Association”. The term “Association” means that one view entails the appearance of another associated with him in the past. In relation to learning this means: students should be familiar with relationships between objects and properties of data items, and then teach them to associate these items with a defined response. For example, three closed lines indicate the triangle; if the wolf is a predator, it follows that he eats meat, etc. P.A. Shevarev identified the following stages of the learning processes to think:

1. To familiarize the student with the General properties of objects;
2. Selection of significant properties to solve certain types of problems;
3. Disclosure of methods of problem solving;
4. Formulation of generalized associations.

2. The theory of analytical syntetical foundations of learning (S.L. Rubinstein, I.A. Menchinskaya).

The authors of this theory in search of the best descriptions of the process of learning come to the concept of “mental operations”:

- mental operations are composed of analysis and synthesis;
- to teach thinking means above all to teach people how to exercise mental operations in relation to a certain class of problems;
- the system of mental operations is called receiving mental activity;
- handle all mental operations so to shape the reception of mental activity on the example of a specific task. In the course of this training occurs the relationship between the theoretical knowledge and ability to apply them in practice.

3. The theory of gradual formation of mental actions (P. Ya. Galperin).

This theory is based on the psychological theory of Activity (L.S. Vygotsky, A.N. Leontiev, S.L. Rubinstein).

P.Ya. Galperin considered three main forms of action: the material, external speaking and mentally.

The material form of the action is original. These are models, drawings, plans. The material form of the action allows opening the operations action and sequence of these actions. External speaking action means that the object is presented in the form of oral speech. It is a form of reasoning aloud or orally explanation. It follows that the speech act is a reflection of the material activity.

Mentally form is the action that takes place in the psyche of the individual. Mental action is also a reflection of material actions.

4. The theory of developmental education (V. Davydov and D. Elkonin).

This theory was developed in line with the basic ideas of scientific school of L.S. Vygotsky and simultaneously developed and characterized these ideas.

The hypothesis of L.S. Vygotsky on the role of education in the mental development of man takes the form of the scientific concept of “developmental education” that was introduced in psychological science and has been reflected in new educational practice. This concept is implemented in practice through the implementation of a pupils specific learning activities. Training is based on the idea of L.S. Vygotsky that learning should lead to mental development and to occur within a period determined by the zone of proximal development.

In the theory of developmental education, the concept of “zone of proximal development” acquired the function total actual training activities, in which mastering students of theoretical knowledge occurs in the form of constant dialog-discussion cooperation and communication between themselves and the teacher. Educational activity is characterized by collective actions of groups of children, whole class in which the dialogues, debates and discussions, constant and detailed “social interaction” between students, students and teachers. Educational discussions lead to the assimilation of certain concepts, values, expressing universal cultural norms. In collective activities among schoolchildren, there is a desire and ability to learn, which goes to the individual educational activity.

The theory of L.S. Vygotsky has developed into a method of a formative experiment, or genetic-modeling method. The essence of the experiment consists in the following. The students tested the productivity of some of the model origin (the Genesis of any concepts and skills), and their appearance is possible only when they perform their learning activities, which are various mental actions and operations.

Permanent full assimilation of concepts and skills in the implementation of training activities contributes to the development of pupils ‘ thinking and consciousness theoretical type. According to the famous expression by V. Davydov, “the school should teach children to think theoretically”. According to this theory the theoretical thinking is opposed to the empirical. Theoretical thinking is not equal to the abstract; this is a “special method of human approach to the understanding of things and events by analyzing conditions of their origin and development”.

For the full development of learning activities, students need systematically solve educational tasks. The main feature of the solution of educational tasks is that in its decision, the student searches for and finds a common method or principle of approach to many particular problems of a certain class, which then does not present for it special difficulties.

The learning problem is solved by a system of training actions:

1. Adoption learning objectives from the teacher or self-formulation of learning objectives;
2. Transformation of the problem to detect general relationships of the studied object;
3. Simulation of selected relations in the subject, graphical and alphanumeric form;
4. Construction of a system of sub-problems to be solved in the common way;
5. Monitoring the implementation of previous actions;
6. Evaluation of understanding of general method by solution of this educational problem.

First, the student needed the teacher's help, but then the student can work independently in the acquisition of necessary skills.

Educational actions aimed at the search for such a genetic relationship to the original subject of the conditions of the situation. This concept of meaningful generalizations is developed by V.V. Davydov, which is based on all training activities.

Based on the theory of developmental education are created training manuals that have been used in school practice.

The success of learning activities

Psychologists have identified several factors that affect the success in training activities. So, with all the variety of motives, which form the motivational sphere of the person, highlights the actual motives of the doctrine. L.I. Bozhovich identifies two broad categories of educational motives. The first is the cognitive interests of children, the need for intellectual activity and mastering new skills and knowledge is a cognitive explanation. The second category of social motives are related to the need of the child's communication with others, in their evaluation and approval, the need of the student to occupy a certain place in the system of available public relations. The motives coming from the activity itself have a direct impact on the subject, while social motives of the teachings can encourage activity through consciously set goals and decisions.

Other researchers of motivational sphere distinguished among the major motivation of achievement and strong-willed qualities of individual. Having considered in detail these concepts, we will be able to answer the question: "What motivates a child to learn?"

1. Achievement motivation. It is known that motivation is a psychological condition that involves desire, affection and the desire to satisfy some need. To be successful, it is necessary to form the achievement motivation. Achievement motivation is the desire of the child for accomplishments, results in his learning activities. Achievement motivation is divided into external

(learning, not because it is interesting, but because it is necessary) and internal (learning because it is fun, I like to learn).

The factors of external motivation of achievement

Most of these factors are pedagogical:

1. Educators, teachers, friends should have the motivation to achieve;
2. It is necessary to teach the child by the tasks that are in the zone of proximal development. *Zone of proximal development* is a concept developed by L.S. Vygotsky. Profitable to determine the child's mental development;
3. ability to clearly assign tasks to the student;
4. required reinforcement of pupil achievement;
5. formation of a positive self-evaluation of the student (in a situation of failure, the child needs to know that it happened because of a lack of will, perseverance, and not due to the fact that he was "stupid");
6. the education of morality, responsibility and sense of duty.

The factors of intrinsic motivation achievement;

Most of these factors are psychological:

1. the presence of internal motivation in others;
 2. creative variety of activities;
 3. lack of strict control;
 4. the lack of haste, the ability of a child to understand what he's doing with interest;
 5. free choice of jobs among those prepared by the teacher;
 6. lack of transparency in activities;
 7. focus on the activity itself and its success;
 8. the child's confidence in himself;
 9. the balance of opportunities and constraints;
 10. emotional and friendly atmosphere.
2. *The formation of volitional qualities of personality.*

Volitional qualities of personality directly affect the training activities. To develop them is another task of the student and the teacher. To the strong-willed qualities are perseverance, autonomy, discipline, organization, precision, punctuality, commitment, diligence, determination, and self-control. Factors of formation of the will also divided into external and internal.

External factors of formation of will:

1. the identity of others should be willed;
2. need an average degree of custody and control, custody and care. In other words, you need to help the active person;
3. should be given exercises on planning and taking responsibility; exercise how to keep self-control in conflict situations;
4. must have a sequence complexity of actions – from simple to complex;

5. the teacher should evaluate volitional behavior of the student and praise him in the case of a decision or other manifestations of will.
6. internal factors of formation of will:
7. the development of a certain level of ideology, ideals and aspirations;
8. morality and sense of duty;
9. clarity and specificity of the goals that a person puts in front of you, and understanding ways to achieve them;
10. reflectivity;
11. emotion;
12. the correct ratio of far and near motives.

Skills

1. Skill is automated element of conscious action, which is produced during the execution of these actions.

Any professional activity is a complex process and requires processing large amounts of information. For the effective implementation of activities must be derived from the field of consciousness of the information and implement a series of actions automatically. This function performs the skill.

The formation of any skill begins with information on the state of the environment in the form of any sensor signal. The General scheme of developing skill consists in the following:

- in the process of the activity for individual that is repeatedly exposed similar stimuli (for example, run the same type of Production operation);
- under the influence of stimuli the subject is formed according to a certain program behavior in response to these stimuli, which is fixed and is “transferred” to the level of subconscious control. This program is not identical with a single response in the schema of reflex. It represents the ability to act in a certain situation with a high degree of adaptability to the situation;
- formation of professional skills is not passive, but under the influence of specially organized exercises included in the system of vocational training.

Exercise is the main way skill is fixed. One of the most important practical issues is the question of the amount of exercise required to complete skills training. The number of exercises depends on the speed of formation of the psychological system of action. The sooner formed the psychological system of action, the fewer exercises. The presence of the student psychological system of action is determined by such characteristics as:

1. a clear sense of purpose of the action and a clear motive for its execution;
2. the presence of an indicative basis of the action in the form of necessary and sufficient information signs, which focuses on the learner while performing the action;
3. partial automation of the action;

4. a system of feedback and formed on the basis of internal self-control of the implementation of the action;

5. “the launch” of the regulatory system of actions aimed at elimination of shortcomings and correction of errors;

6. systematic improvement of quality and increase in pace of activity.

The presence of these signs allows considering the skill formed to finish the regular exercises of his community service. However, if exercises to completely stop and at the same time not to perform an action, the skill may gradually disintegrate. A new series of exercises will be necessary for its recovery. The most complete theory of the psycho-physiological mechanism of the formation of a sensomotor skill proposed by N.A. Bernstein. Structurally augmented this theory was the concept of P.K. Anokhin of the model of behavioral act and the analysis of the structure of mental functions, proposed by B.G. Ananyev. Thus, today there are serious theoretical basis for developing practical ways of developing skills and incorporating them into the system of vocational training.

2. The intermediate stage of learning based on the obtained knowledge without level of skill. Skill is the knowledge that students understood and correctly reproduced; speaking in the form of properly performed actions and acquired some of the characteristics of efficiency. At the stage of skills learned the method of action governed by knowledge, and the extent of training achieved the transformation of skills into a skill. The approximate basis of the action changes in this way. The ability involves a complex system of mental and practical actions. In the presence of skill under the psyche, control of people successfully performs this or that action. Effective execution of complex actions is the outward expression of competence.

The formation of skills, according to K.K. Platonov, passes a number of stages:

1. initial skill;

2. lack of skilled action;

3. developed individual skills (skilled, relatively complete action items);

4. highly advanced skills;

5. mastery.

At the stage of full conscious ability to control ensures the operational restructuring of the system-the structural basis of action when a significant change of conditions for its implementation. Skill has a standardized form.

3.8 Motivation and Activity

Motivation is a system of stimulating processes to perform certain actions

or activities to meet the needs, motives, interests, desires and achieve goals. From the definition we see that the concept of "motivation" brings together different motive power in the overall structure.

The main reason for the activity is the human desire to meet their needs. In psychology distinguish between needs and requirements. In order to live and act in the world, man needs food, water, air, movements, material and spiritual culture, other people, etc.

Need is an objective need for something that the man himself may not survive and not be aware of. For example, newborn baby objectively needs in the adult human (without die), but subjectively this is not only not conscious but not feeling, not experiencing, and only on the third month of life, the objective need is converted into the subjective mental state -- the need to communicate (the child in the mother's violently happy, leans on her hands, smiling, etc.). As they grow, the need for communication is reflected not only in experiences, but in human consciousness.

Need is a subjective mental state of the individual, reflected in the experience and awareness of the human needs that it is necessary to maintain the existence of his body and personality development.

Needs are the source of human activity. Needs is always accompanied by subjective experiences: desire, anxiety, expectation, which, in turn, motivate us to certain actions, actions aimed at the satisfaction of needs. In other words, the needs give rise to a motive.

Motive (from lat. "movere" – to move, to push) – is the motivation to work, which is due to meet the needs of the subject and determines the direction of its action. According to A.N. Leontiev, motive – is objectified need. In fact, as the needs of the subject, is able to satisfy this need is not reflected, is not fixed. But when such an object is detected, the psyche reflects the image of the subject can become a motive of behavior. Motive is a consideration, by which the subject must act. Therefore, the motif provides the needs of a certain direction.

According to A.N. Leontiev, human activity is inextricably linked to his needs and motives.

Motive is a form of manifestation of needs, motivation for certain activities, the object for which the activity it carried out.

- the motive by A.N. Leontiev is materialized need;
- operation as a whole is the unit of human life, activity, meet a specific motive;

- a particular motive motivates people to the problem statement that identify the purpose, which, being presented under certain conditions, requires actions aimed at creating or receiving an item that meets the requirements of motive and satisfying the need. The goal is to present them a conceivable result of the activities;

- action as an integral part of the activity meets the perceived needs. Any activity carried out in the form of actions or chains of actions;
- activity and action are not rigidly linked. The same operation can be realized by different actions and the same action can be included in several activities.

Motive is what induces a person to activities, directing him on meeting the specific needs. Motive is a reflection of needs, which operates as an objective pattern, an objective necessity.



Figure 3.8 The motivational structure of activities

For example, the motive can be hard work with enthusiasm, and can be the evasion was carried in protest.

The reasons there may be needs, thoughts, feelings, and other mental formations. However, for the implementation of activities is not enough internal motivations. You must have the object of activity and motives with the goals that the individual wants to achieve. In motivational target sphere with great clarity acts as social conditioning activities.

Motivational-requirement sphere of the personality is the totality of motives, which are formed and develop over a person’s life. In General, this area is dynamic, but some motives are relatively stable.

Definition → **Motivation** the hypothetical physic-mental force that leads humans and other animals to act. In learning theory, any situation which acts to punish or reinforce particular behavior. A willingness to make an effort in the pursuit of a goal. The process or action of convincing others to make an effort in the pursuit of a goal.²²

Motivational sphere of personality, from the point of view of its development, can be assessed by the following parameters: latitude, flexibility and hierarchizations.

Latitude of motivational sphere is a qualitative variety of motivational factors such as dispositions (motives), needs, and goals. The more a person has a variety of motives, needs, and goals, the more developed its motivational sphere. Latitude is the diversity of the potential range of objects that can be used for the person’s means of satisfying the current needs.

²² The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 319

The flexibility of the motivational sphere is reflected in the fact that, to meet the motivational impulses of a more General nature (higher level) can be used in more diverse motivational drivers of the lower level. For example, the more flexible is the motivational sphere of the person, which depending on the circumstances, satisfaction of one motive can use more varied resources than the other person. For example, for one individual the need for knowledge can be satisfied only through television, radio and film, and for the other means of satisfaction variety of books, periodicals, communication with people. The last motivational sphere, by definition, is more flexible. Flexibility is mobility linkages between different levels of hierarchical organization of motivational sphere: between the motives and the needs, motives and goals, needs and objectives.

The following characteristics of motivational sphere are hierarchic motives. Some motives and goals stronger than the others and occur more often; others are weaker and less actualized.

Motivation is a combination of internal and external driving forces that motivate an individual to act in a specific, purposeful way; the process of encouraging yourself and others to work to achieve the organization's objectives or personal goals.

The concept of "motivation" is broader than the concept of "motive". Motive unlike motivation is what belongs to the subject of behavior, is it sustainable personal property, inside incite to commit certain actions. The concept of "motivation" has a double meaning: first, it is the system of factors influencing human behavior (needs, motives, goals, intentions, etc.), and secondly, it is the characteristics of the process, which stimulates and supports behavioral activity at a certain level.

Motivational sphere includes:

a. Motivational system of the personality as common (holistic) organization of all motive forces activities underlying human behavior, which includes such components as needs, the actual motives, interests, inclinations, beliefs, goals, attitudes, stereotypes, norms, values, etc.;

b. Achievement motivation is the need to achieve high performance behavior and satisfaction of all other requirements;

c. Motivation of self-actualization is the highest level in the hierarchy of motives of the individual, which includes the needs of the individual to most fully realize their potential, and the need of self-realization.

Worthy goals, plans, good organization will be ineffective, if not backed by motivation. Motivation can compensate for many shortcomings of other functions, such as deficiencies in the planning, but the motivation is almost impossible to reverse.

Success in any activity depends on not only abilities and knowledge, but

also motivation (the desire to work and achieve high results). The higher the level of motivation and activity, the more factors (i.e., motives) of the person to encourage activities, the more effort it tends to make.

Highly motivated individuals work more and tend to achieve better results in their activities. Motivation is one of the most important factors (along with the abilities, knowledge, skills), which provides for success in activities.

3.9 Personality Types of Motives

Motives of personality are related with or needs of the individual in the function of motivation. Internal mental activity drives behavior is due to the actualization of those or other needs of the individual. Motives of human activity can be of various types: organic, functional, physical, social, spiritual.

Organic motives are aimed at the satisfaction of natural human needs associated with growth, preservation and development of the organism (hunger, thirst, avoidance of pain, the desire for thermal comfort, etc.).

Functional motives are satisfied through different kinds of cultural forms of activity, such as games and sports.

Material motives impel people to work that aimed at the creation of household items, various objects and tools directly in the form of food, providing the natural needs.

Social motives give rise to different types of activities designed to occupy a certain place in society, to gain recognition and respect from other people. It needs creativity, independence, recognition, respect, involvement, affiliation (the desire for contact and communication), prevention, protection, dominance, power, protection, aggression, sexual relations, aid, and understanding.

Spiritual motives are the underlying those activities that are associated with the individual self-improvement.

Organic and functional motives together constitute the motivation of behavior and activity of an individual in certain circumstances, and may not just influence, but also change each other.

Human needs are manifested in specific forms. People may become aware of their needs. Depending on this, the motives are divided into emotional needs, desires, volition, desire, etc.

There are two groups of interrelated motives:

- Generalized, the content of which expresses the subject of the needs and consequently the focus of the aspirations of the individual. The power of this motif is due to the value of his needs;

- Instrumental as reasons for the choice of ways, means, and ways of

achieving or implementing the objectives, not only due to needs condition of the individual, but also its readiness, potential to operate successfully on the implementation of the goals set in these conditions.

There are other approaches to the classification of motives. For example, the degree of public importance distinguishes the motives of a broad social plan (ideological, ethnic, professional, religious, etc.), group plan and individual personal character. There are also motives of goal achievement, avoiding of failure, the motives for approval, affiliation (cooperation, partnership, love).

In practice, it is important to consider that the people doing the identical form and subject to the results of actions are often guided by different, sometimes opposing motives give a different personal value to their behavior, actions. In accordance with this and all things must be different: both moral and legal motives.

Motivational phenomena, repeatedly repeating, eventually become individual traits of human personality. This trait primarily can be attributed to the motive of achievement of successes and motive of avoiding of failure, and specific locus of control, self-esteem, level of claims.

In consciously, justify motives include values, beliefs, and intentions.

Value is a concept used in philosophy to refer to personal, socio-cultural significance of certain objects and phenomena. Human values form a system of value orientations, elements of the internal structure of the personality, which is of particular significance. These value orientations are the basis of consciousness and activity of the individual. Value is painted personal attitude to the world, arising based on not only knowledge and information but also own life experience. Values give meaning to human life. Values are a part of the culture received from parents, family, religion, organizations, schools and the environment. Cultural values are widely supported beliefs that define what is desirable and what is right. Values can be:

- Self-organized that relate to the individual, reflecting his objectives and General approach to life;
- Oriented other that reflects the desires of society concerning the relationship between the individual and the group.

Beliefs are a theme of practical and theoretical activities grounded on theoretical knowledge. For example, a person becomes a teacher, not only because he is interested in transmitting knowledge to children, not only because he likes to work with children, but also because it knows how much in the creation of a society depends on the education of consciousness. This means that he has chosen his profession, not only out of interest and out of inclination to it, but by conviction. Deeply grounded beliefs persist throughout a person's life. Beliefs are the most generalized motives. However,

if the generalization and sustainability as the characteristics of the individual properties, the belief cannot be called motives in the accepted sense of the word. The more generalized becomes the motive, the closer it is to the property of the individual.

Intention is conscious decisions to achieve a certain goal with a clear view of means and methods of action. Here are combined incentive to action and planning. Intention organizes human behavior.

The above types of motives cover only the principal manifestations of motivational sphere. In reality, there are so many different motivations as possible human-environment relationship.

Control questions:

1. Why “needs” determine human activity?
2. Analyze why knowledge about human motivation is necessary for applied psychology
3. Explain main general psychological features of human activity
4. Analyze role of the Psychological Theory of Activity in current psychology
5. Compare levels of Activity
6. Explain main differences between needs and motives
7. Analyze relation between motives and personality
8. Compare types of Human Activity
9. Explain connection between Motivation and Activity
10. Give examples for human social motives.

CHAPTER 4. SENSORY-PERCEPTUAL PROCESSES. SENSATION.

In order to understand the next chapters of the Textbook it is necessary to be aware that all cognitive processes exist in close relationship. They interact with each other in a huge dynamic system. This system serves for human learning which is significantly important for his adaptation process to environment.

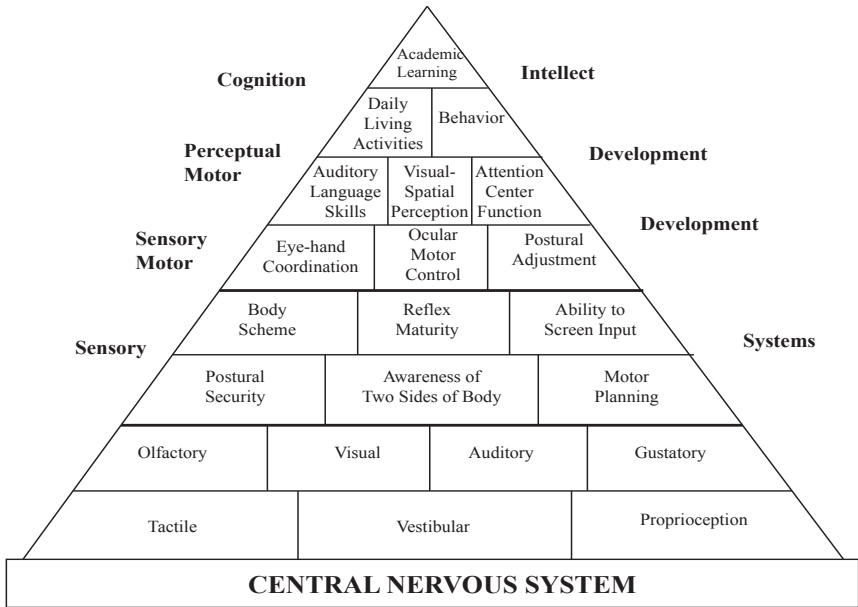


Figure 4 System of learning process (by Williams & Shellenberger)²³

4.1 Sensation as a Basis of Cognition

‘Sensation’ is the subjective experience of a physical stimulus. Sensation is reflection process of object’s properties. Sensation much differs from perception not only qualitatively but also quantitatively. For example, holistic impression of the flower which individual gets by holding a flower admires them and enjoys its aroma which is called perception. Separate sensations represent for individual flower’s aroma, the visual information about it, tactile

²³ <http://www.strabismusworld.com/neurology-physiology-psychology-vision/book-review-dr-bs-parent-and-teacher-guides-on-child-vision-learning-development-fundamentals-1/>

impression etc. However, at the same time, thus, the perception is composed of one or more of the senses, creating at once complete image of the object.



Sensation is the subjective experience of the stimulation of a sensory organ by an appropriate source of energy, such as light striking the eye or a stick touching the skin. The process of gathering information through the sensory organs. An exciting event, as in the need for creativity or play.²⁴

Sensations are the primary form of human knowledge about environment. Regarding sensations as the source of knowledge human psyche developing and normally perform.

There were found that sensation is continued process of receiving external information. Evident (touch with insulation). Experiments have shown that in the case when there are no external stimuli the human psyche cease to work normally. Because of this status, hallucinations, thought disorder and other pathologies distort perception. There are certain psychological problems during sensory deprivation by limiting the flow of external stimuli.

Sensation is a form of direct reflection of object's properties, which influence on senses.

Sensation is a basic element of other forms of mental activity. Every sensation has the quality (modality), strength and duration. There are types of sensation such as visual, auditory, tactile, etc. With sensation it is possible to determine the localization of stimuli on the body surface and from the environment. Sensations are the primary source of knowledge. They provide other complex forms of reflection of reality in the psyche (of perception, thinking). The emergence and dynamics of sensations are subject to a number of laws: adaptation, sensitization, compensation, aftereffect, which are caused by a change in the sensitivity of the analyser.

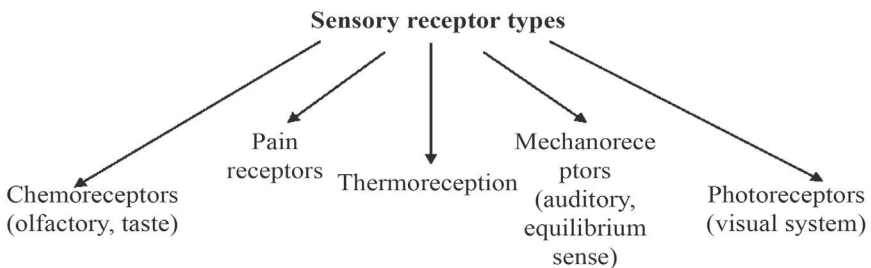


Figure 4.1.1 Types of sensory receptors

²⁴ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 484

The concept of “analyzer” (apparatus performing the function of differentiation of external stimuli) was introduced by academician I.P. Pavlov.

He also studied the structure of the analyzers, and came to the conclusion that they are composed of three parts:

First, there are receptors of peripheral part. These nerve endings located in our senses directly perceive external stimuli.

The second part is pathways by which the excitation is transmitted from the periphery nervous center to the brain.

The third part is the brain as central part of the analyzers. These parts of the brain responsible for the recognition of the relevant stimulus (vision, hearing, taste, touch, smell). In the brain, impact of the stimulus is converted into a mental process, which is called “sensation” in psychology.

Definition → **Sense organ is any biological structure which gathers information from the world and transmits it to the central nervous system, such as the eye or the ear.²⁵**

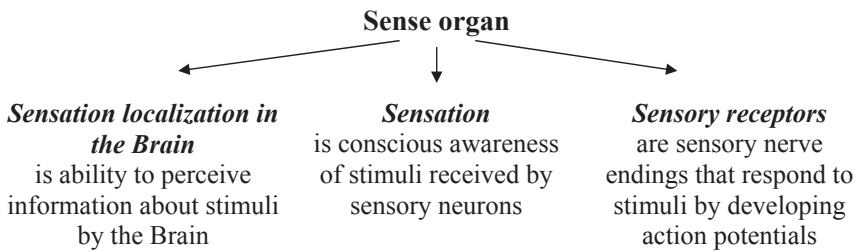


Figure 4.1.2 Structure of sense organ

Thus, sensations classification is based on receptors through which these senses become available.

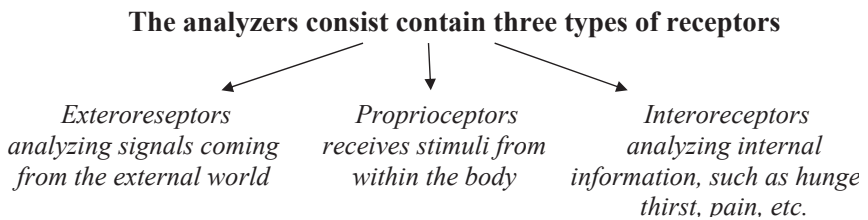


Figure 4.1.3 Types of receptors

²⁵ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 484

4.2 Properties of Sensations

Sensations may be described by multiple characteristics and properties.

Modality

Modality is a qualitative characteristic. Each kind of sensation has its modal characteristics. For instance, visual sensation can be hue, lightness, saturation; hearing is related to pitch, timbre, loudness; touch has such qualitative characteristics as hardness, roughness, etc.

Localization

Localization is spatial characteristics of sensation, which helps to get information about the localization of the stimulus in environment.

Sometimes it is difficult to define sensations' localization, for example, in the case of painful and "internal" sensations. Interesting in this regard, "the problem of the probe": When individual writes or cuts something, he decide that sensation localized on the tip of a pen or knife, but not whole zone of pen or knife contact with the skin.

Intensity

Intensity is a classical quantitative characteristic. The problem of measuring the intensity of sensation is one of the most important in psychophysics.

The basic psychophysical law reflects the relationship between a measure of sense and measure of stimulus. Psychophysics explains the diversity of observed behaviors and mental states primarily causing by difference in their physical situations. It is necessary to understand connection between human body response and sensory system reaction. Irritation area on human body is cause a sensation. Each sensory system has its limits. It means that there is an area of exact sensation. These limits were explained in such psychophysical laws as logarithmic low discovered by G. Fechner, power law of S. Stevens, as well as Y.M. Zabrodins' generalized psychophysical law.

Duration

Duration is a timeline characteristic of sensation. It is determined by the functional state of sensory system, exactly by the time of stimuli's influence and its intensity. Sense occurs later than the stimulus begins to act, and sense does not disappear immediately with stimulus's termination. The period from the beginning of the stimulus and emergence of sense is called latent (hidden) period of sensation. This period is not the same for different types of sensations (for tactile = 130 msec. for pain = 370 msec. for taste = 50 msec.) and can vary dramatically during diseases of the nervous system.

After termination of visual stimulus its trail is saved for some time as a sequence of images, which can be either positive (for the relevant characteristics of stimulus) or negative (for the opposite characteristics of stimulus). Positive

sequential images we usually do not notice because of their brevity. The emergence of sequence of images can be explained by the phenomenon of retinal eye fatigue.

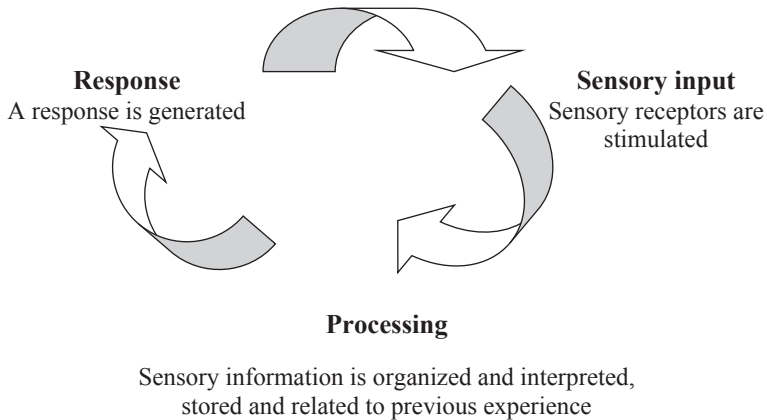


Figure 4.2 The process of perception and processing of sensory information

The auditory sensation, similar to visual one, may also be accompanied by sequence of images. For example, unpleasant sense often accompanied by the deafening sound effects and this phenomena called as “ringing in the ears”.

4.3 Types of Sensations

Human sensations are extremely diverse. Although since the time of Aristotle, there were classified five classic senses: vision, hearing, taste, touch, smell. In XIX century knowledge about composition of sensations dramatically expanded regarding scientific data. Scientists discovered such types of sensation as vestibular sense, vibrating sense, kinesthetic sense, and others.

It is known that man has five senses. But there is also another type of external sensation. It is motor skills. These skills have no single sensory system, but they also cause a sensation. Therefore, a person can experience six types of external senses: vision, hearing, taste, touch, smell and kinesthetic one.

Visual system is a main source of information about the outside world.

Definition

Vision is the capacity to detect light and perceive objects reflecting light.²⁶

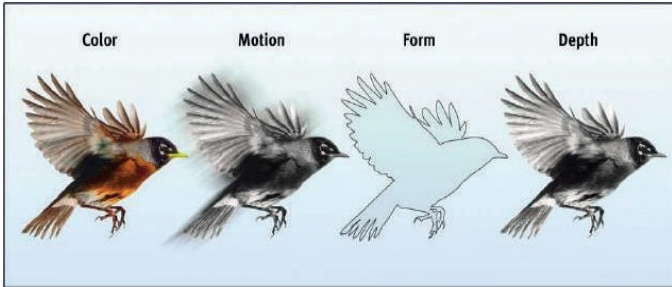


Figure 4.3.1 Sources of visual information ²⁷

By this system, man gets nearly 80% of the total volume of information. Eyes are location of visual sensation by which individual gets information about light and color of stimuli. Perceived by human eye colors of stimuli are divided into chromatic and achromatic groups. The chromatic group includes the colors of rainbow spectrum. Achromatic group consists from black, white and gray colors. Human eye perceives about 150 color shades which depending on the parameters of the light wave. The retina has two types of receptors: rods and cones. Sticks adapted to work in low light and give a black and white picture of the world, and cones, by contrast, have the highest sensitivity at good lighting conditions and provide color vision. The most interesting problem is the problem of color vision. There are two main theories, three chromaticity theory and the theory opponent colors that try to explain the phenomena of color vision.

Auditory system is a next importance system which obtains external information.

Definition

***Auditory receptors* are hair cells in the inner ear of two different types: inner hair cells, which are the auditory receptors, and outer hair cells, contributing to “tuning” the cochlea, though they also have a supporting role.**²⁸

²⁶ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 570

²⁷ <https://image.slidesharecdn.com/16sensperceptionivisionfall11b-120703225426-phpapp02/95/introductory-psychology-sensation-perception-vision-23-728.jpg?cb=1341356322>

²⁸ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 65

Hair cells are located between the so-called tectorial and basilar membranes in the chamber known as scala media of the cochlea. The movement of the liquid inside the scala media (endolymph) as a result of the action of the ossicles of the middle ear causes a bending of the stereocilia (hairs) attached to the tectorial membrane. A receptor potential is generated and eventually may result in an action potential. The auditory information will be transmitted to the brain by the VIII cranial nerve (vestibulocochlear or auditory nerve).

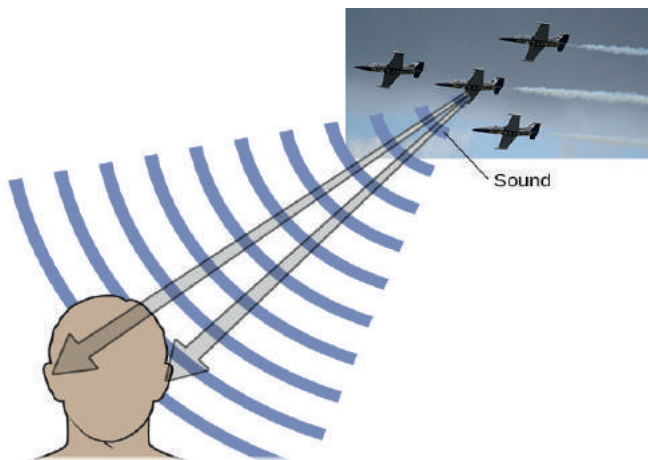


Figure 4.3.2 Sounds as a source of Auditory system²⁹

Sensation of sounds can be divided into music and noise. Their difference lies in the fact that the musical sounds are periodic rhythmic vibrations of sound waves and noise is spasmodic and irregular fluctuations.

Many people have interesting feature of combination of auditory and visual systems in one common sensation. In psychology, this phenomenon called as “Synesthesia”. For example, stable association arising between melodies and color sensations. Most people may say, about “color” of melody or word.

Several less common synesthesia are based on the association between color and smell. It was found that people with dominate smell system (for example, tasters of perfumes) can translate information about smell into language of color.

Hearing relates with getting information about sounds of the environment. A healthy young person can hear sounds roughly in the range of 20 to 20,000 Hz. The feeling of volume and height are interrelated: the person with the greatest sensitivity to sound marked by sound frequency 1000 Hz.

²⁹ https://s3-us-west-2.amazonaws.com/courses-images-archive-readonly/wpcontent/uploads/sites/902/2015/02/23224732/CNX_Psych_05_04_MonInt.jpg

Kinesthetic sensations are a combination of sensory information from muscles, tendons and ligaments. Kinesthetic system also play great role in human live. Kinesthetic sensations do not have a special sensory organ. They are caused by irritation of the nerve endings, which located in the muscles, joints, ligaments, bones. These irritations occur during exercise, when the movements associated with fine motor skills (drawing, writing, sewing etc.). Developed kinesthetic sensation is important, of course, for all people. But it is especially necessary for those whose profession is related to complex movements' performance when it is very important not to be mistaken.



Figure 4.3.3 Hands and Kinesthetic sense³⁰

Kinesthetic and vestibular sensations inform individual about his own movement and position in environment.

Vestibular sensation is a combination of information coming to the brain from the semicircular canals of the inner ear. One of the main functions of the vestibular sensation is to provide a sustainable basis for the visual observation. Regarding this feature, individual can see stable picture of the world during motion.



Figure 4.3.4 Vestibular sensation³¹

³⁰ <https://www.stihi.ru/pics/2013/04/03/1231.jpg>

³¹ <http://www.blinn.edu/socialscience/LDThomas/MyNotes/07Olfaction,%20Gustation,%20Tactile%20&%20Spatial.htm>

Touch sensation provides individual with information that comes from contact of stimuli with skin. Modern researchers distinguish four types of touch sensation: sensation of heat, cold, pressure and pain. Pain sensitivity, for example, has a very important biological significance: the pain signals of possible physical danger. A person who does not have such sensitivity that is rarely, constantly in danger.

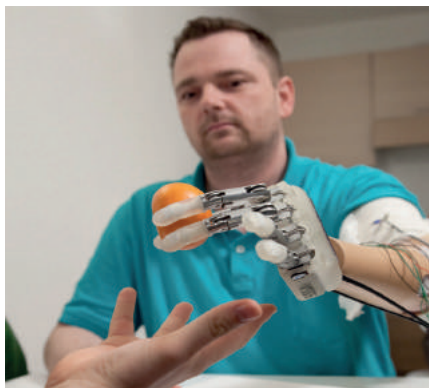


Figure 4.3.5 Bionic Hand Gives Amputee Real-Time Touch Sensation³²

Definition

***Tactile receptor* any of the nerve endings having receptors located in the skin, including those for pressure, texture, vibration, temperature, and pain.³³**

Taste sensation provides individual about information from substance in mouth, which detect by taste buds in the oral cavity and tongue. Basic taste qualities are sweet, salty, sour and bitter. Apparently, all other sensations are caused by a combination of these four components.

Definition

***Taste* is the chemical sense of detecting molecules dissolved in liquid placed on the tongue, including sensations of salt, sweet, sour, and bitter and the unlimited number of sensations possible when combined with olfactory and tactile senses. The experience of any combination of sweet, sour, salt, and bitterness mixed with olfactory and tactile sensations, as in the taste of a chocolate bar.³⁴**

³² http://blogs.discovermagazine.com/d-brief/2014/02/05/bionic-hand-gives-amputee-real-time-touch-sensation/#.WDsc_323vgE

³³ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 535

³⁴ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 535

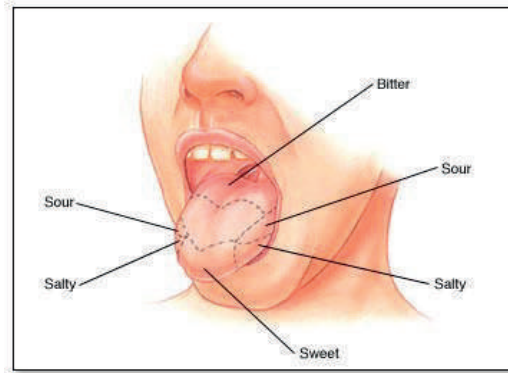


Figure 4.3.6 Taste localization³⁵

Olfaction is a sense of smell, which provides individual about the presence in the air various smell chemicals.

Definition

***Olfaction* is the sense of smell, which includes a set of chemical detectors located in the mucus linings of the nose and nasal passages and nerves leading back to the olfactory bulbs on the bottom of the cerebral cortex.**³⁶



Figure 4.3.7 Olfaction sense³⁷

³⁵ http://www.mhhe.com/biosci/esp/2001_gbio/folder_structure/an/m3/s2/anm3s2_1.htm

³⁶ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 346

³⁷ https://media1.popsugar-assets.com/files/thumbor/Q4545-Qktt53ws6NHizz-XUpCEo/fit-in/550x550/filters:format_auto-!!-:strip_icc-!!-/2012/05/21/3/192/1922153/592dfdb9277b8555_Olfaction.jpg

4.4 Measurement of Sensation

Sensory system has sense thresholds that reflect subtle differences between properties of the stimuli. Psychophysics G. Fechner (1860) studied measurement of sensation thresholds.



Definition

Absolute threshold – the lowest level of a sensory stimulus to which a subject can give any indication of perception of a stimulus. Originally psychophysicists believed there was some absolute level which corresponded with human consciousness which defined this limit, but close study revealed variability in subject responses which were partially random and partially dependent on the instructions given to the subject. Subsequent study revealed that there is a gradual onset of stimulus detection which is usually described using signal detection methods which give probabilities of response to a stimulus at different intensities or levels of the stimulus cortex.³⁸

There are two absolute thresholds.

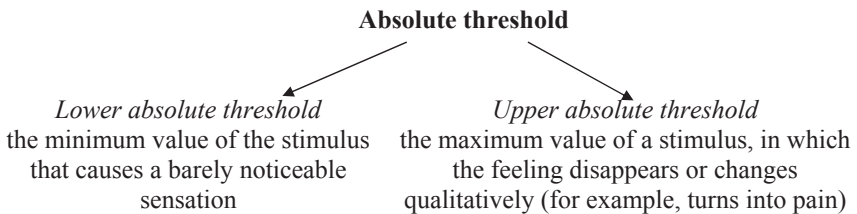


Figure 4.4 Types of Absolute threshold

The differential threshold is the minimum change in stimulus intensity causes a change in sensation. The value is inversely proportional to the threshold of sensation is called sensitivity. The presence of thresholds prevents human from information overload, and some biologically harmful effects.

Sensation thresholds of individual may vary considerably at different times. This is due to the influence of many factors. One of them is emergency factor which change thresholds quickly, but not for long that relates with sensory adaptation. Long-acting factor cause a gradual and sustained change

38 The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 2

in sensation thresholds, which relates with age. An example of the first factors can be, and the second relates to age.

Sensory adaptation is a change in sensation thresholds under the action of a constant stimulus. During complete adaptation sensation disappeared. Thus it is not allowed hyper irrigation of sensory system and ensures sensitivity to very weak effects. Vividly adaptation expressed in tactile, thermal, visual and olfactory sensations. For example, after being in the dark for hours, the light sensitivity is increased by approximately 200 000 times.

Practically there is no adaptation to pain and sound effects.

On sensations thresholds affects motivation, biological or social significance of the stimulus. For example, when creating an interesting game situation children exhibit higher visual acuity compared with its dimension under normal laboratory conditions.

With age, under the influence of growth and maturation of the relevant brain structures, the child experiences a decrease of thresholds of sensation. In particular, it is well known that as they become older color discrimination is significantly improved and visual acuity is increased.

Control questions:

1. Why Sensations are the primary form of human knowledge?
2. Define Sensory receptor types.
3. Why sensations are important for human being?
4. Give examples for Exteroreceptors.
5. Give examples for Interoreceptors.
6. Define types of sensation.
7. What kind of combinations of auditory and visual systems do you know?
8. How many absolute thresholds do you know?
9. Analyze why Sensory adaptation is important for human.
10. How sensations thresholds affect motivation?

CHAPTER 5. PERCEPTION

5.1 Perception and Its Features

Perception is directly related with sensation. Both of these forms of reflection are links in a single process of sensory perception (Figure 5.1).

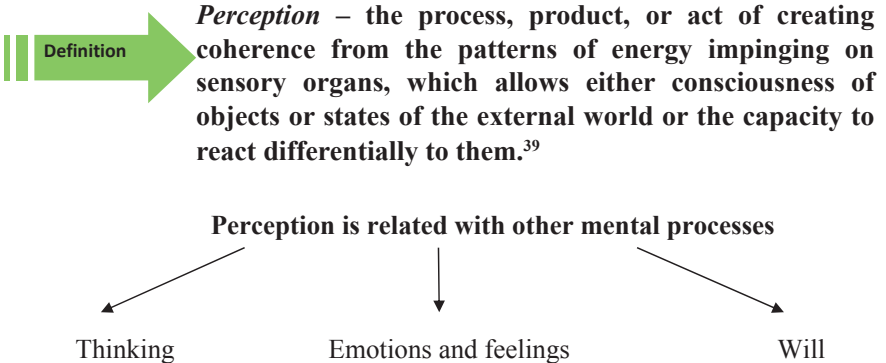


Figure 5.1 Link perception with other mental processes

Only human and higher animals have ability to perceive external environment in the form of images. Perception develops and improves during life experience.

Perception relates with sensation, as well as with other cognitive processes. There are two fields in the cortical region. First cortical region field supports sense organs in order to get a sensation. The second one combines information of sensations into an integral, holistic image about surrounding environment. Thus, the work of secondary field provides human perception.

Perceptual images have following features:

A) Objectification. During perceiving an object (tree, book, etc.), individual awares that the object is not a subjective mental experience, but is objective one, which exist externally.

B) Integrity. Perception has a holistic nature: perceived images of external objects are reflected in their integrity of its properties and qualities.

Perception image is not the mechanical sum of the parts or elements of an object. Individual perceives an object in its entirety. From the very beginning, from the first moment of perception, individual get integrative image about

³⁹ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 369

external objects rather than creating it by summing up of its elements. After that individual starts to perceive elements of image, which complement the whole perception. For instance, individual perceive a house as a whole object, and then he already start distinguish the floors and other parts of the structure.

Thus, perception is an active process, which relates with motor components of sense organs (movement of the hand, eye, etc.) and regarding them individual gets adequate image of external object.

Gestalt psychology is a classical branch of psychology, which study visual perception.



Gestalt psychology a school of thought in psychology that focused on perception and emphasized the organization of experience into wholes that were more than the sums of their parts. It developed the Gestalt laws of perceptual organization and applied them to other areas of psychology. It also was the first modern point of view that emphasized creative insight in problem solving⁴⁰.

According to the Gestalt psychology, visual perception is a leading mental process determines psyche development. These studies have proved that people tend to perceive external environment in the form of integral configurations, rather than individual fragments. M. Wertheimer, V. Keller, K. Koffka put forward a program of studying the psyche in terms of holistic structures which called “gestalt”. Gestalt notes that objects that move in unison tend to be grouped together in perception. Also called the factor of uniform density 119. They believed that that all processes in nature are initially integral. Therefore, the process of perception is not determined by individual elementary sensations, but determined by whole stimulus acting on the organism. Perception is not reduced to the sum of sensations, and the properties of an object are not described through the properties of parts.

Thus, result of perception is an integrated image, which is formed by a complex of interconnected different sensations. In order to perceive an object it is necessary to perform counteractivity aimed exploration, construction and clarification.

Gestalt psychology operates with basic lows:

⁴⁰ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 221

Law of proximity. A Gestalt principle of sensory organization which suggests that in making sense of the world our senses group together things that appear close together in space. Thus in the following series of letters ddd ddd ddd there seem to be three groups because they are proximate, or near to, each other.

Law of closure. One of the laws of Gestalt perception, which suggests that people tend to perceive objects with missing parts as complete although they can discern the missing parts if they focus on them and to perceive asymmetric objects as symmetric. Thus this figure < > is likely to be perceived as a diamond or tilted square shape even though it is really two separate angles.

Gestalt laws of organization. A set of observations about the interrelation between aspects of the physical world and the formation of perceptual wholes by humans. These include the laws of grouping, closure, common fate, continuity, proximity, similarity, and symmetry.

Isomorphism the assumption that for every perception there is an analogous neurophysiological representation of the perception.

The principle of good form as the tendency of perceptual systems to form the best and simplest possible image or internal representation of an external object or information source from the data received⁴¹.

Thus, Gestalt psychology discovered main features of perception.

5.2 Properties of Perception

These relationships determine the basic properties of perception:

1) **The integrity of perception** arises from the fact that the perception reflects a holistic image of the object, which, in turn, derives from the human generalized knowledge about properties and qualities of the object. Perception is able to capture not only the feelings of the individual, but also integrate sensations to generalized structure (melody entirely);

2) **Constancy of perception** allows individual to percept a relatively constant invariant structure of the object under different conditions of environment such

⁴¹ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 407; 221; 269; 295.

as distance, angle and illumination. Orientation in environment is impossible without constancy of perception because each time individual will be faced with “new” items of the object in different distance, angle or illumination.

3) Objectivity of perception is relatedness of all received through the senses information about the outside world to the object itself. Objectivity plays an important role in the regulation of behavior. Regarding to objectivity of perception individual can distinguish, for example, brick of explosive unit from brick of other kind.

4) Reflection of perception is related with idea that perceptual images always have a certain meaning. Perception always is connected with thinking and speech. Human being perceives external information through the prism of meaning.

5) Categorization is relation of perceived object with the knowledge about it which is represented in human psyche by group or class of objects. For example, when individual looks at the clock, he does not see something round, brilliant, but sees a particular item such as “hours”.

6) Activity of perception where motor component of sensory system is involved in perception process. For instance, hands movement in order to touch something, eye movements in order to get visual information, etc.

7) The property of apperception helps to build image of object during perception by using information about it from memory. This image permanently adjusts by comparison with the reference image. Perception of each new object or phenomenon is determined by individual experience and background knowledge. Thus, people of different professions have different perceptions of the meaning of “forest”. For instance, a forester perceives forest as subject of his care and protection, a forestry workers perceive as a target for the production of furniture and paper, a doctor can perceive as a place to build the sanatorium treatment and rest people, an artist perceives as a way of the future works of art.

Thus, the perception depends not only on the stimulation, but also from the sensing of the object by individual. Perception is affected for example by individual’s needs, emotions, and values.

Another characteristic of perception is its latent period. Latent perception is period between exposure of stimuli on individual and its reflection in form of image in the psyche. It can be reduced by training, but the maximum attainable level depends on liability (functional mobility) of neural processes. The latent period of perception also depends on the functional state of the organism.

From accurate perception of objects and phenomena should be distinguished illusion. Illusion is distorting perception. The paddle immersed in water, appears in pieces. The illusion of fracture depends on the difference in the refraction of rays of light in air and in water.

Definition

Illusion – a perception of sensory information that is not inherent in the stimulus itself. Any stimulus that generally leads people to have false perceptions of sensory information. A false belief or memory.⁴²

The great group of illusions is associated with the prospect. It is known that distant objects are represented by small; parallel rails converging to the horizon, and same house and the trees seem to be getting lower and lower, and somewhere on the horizon merge with the earth.

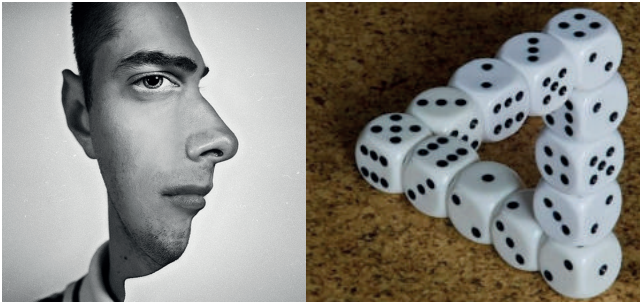


Figure 5.2 Examples of Illusion⁴³

A large group of illusions is connected with the phenomenon of contrast. The gray circles on a black background look bright. Two equal circles seem different when around one of them put a few large, and around another couple put smaller circles. In the moonless night the stars look brighter.

Illusions must be taken into account when working with devices. Under the microscope, for example, objects' velocity increasing.

5.3 Types of Perception

1. Sophisticated types of perception characterized by simultaneously mobilization several sensory systems. For example, visual and auditory; visual-auditory-tactile; visual-auditory-motor, etc.
2. Special forms of perception vary depending on perceived object or stimuli: time, space, movement, relationships, speech, etc.

⁴² The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 248

⁴³ <https://s-media-cache-ak0.pinimg.com/236x/90/80/d5/9080d535095b904ecf8f69d94e764ef9.jpg>

There are the following features of perception of space and movement: perception of depth and distance of objects, motion perception and perception of form.

1. *Perception of depth and distance of objects* is related with object's location in environment. Perception allows determining how to percept objects far from individual and from other objects.



Figure 5.3.1 Psychological experiment of Depth Perception by infant⁴⁴

Due to the fact that human eyes are spaced from each other, each eye looks at the object with a number of different positions. Consequently each eye sees the same object from different angles. This difference in direction or angle between the axes of vision of the two eyes is called binocular parallax. Sensory system “tracks this angle in order to get information about subject distance: big corner inform that subject is close, small corner inform that subject is far”.

2. *Perception of movement* is the phenomenon that an object can be perceived as moving, even if its image is not moved on the retina, for example, at two spaced apart from each other are light bulbs. First lit for a short time and is extinguished, then ignited the second and also goes out, and so on. If the time interval is between the firing of lamps from 30 to 200 milliseconds, it seems to us that a light strip is moved from one point to another.

This phenomenon is called stroboscopic effect, and has been used in animation and visual advertising for long.

⁴⁴ <https://s-media-cache-ak0.pinimg.com/736x/21/d6/91/21d69141bc6898a5fecb33472be36727.jpg>

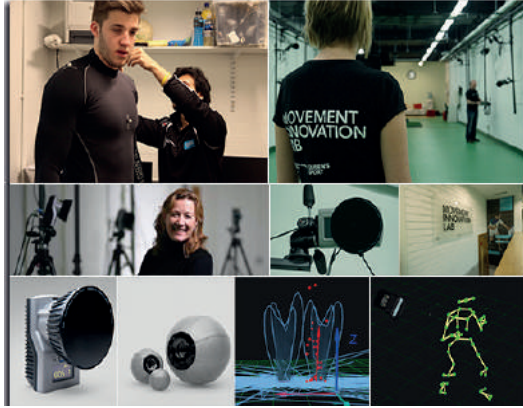


Figure 5.3.2 Motion capture at the Movement Innovation Laboratory⁴⁵

3. *Perception of form* is crucial in the process of identifying any object. The images are characterized by the perception of integrity. This means that they represented a connected picture image of an object or event. Human do not perceive a tree as a collection of objects such as green oval located on a background of black vertical lines of thick and thin black lines, most of which are at a slant. Human see a tree: the trunk branches and leaves. This unification of disparate objects in a holistic way is due to the special mechanisms of perception.

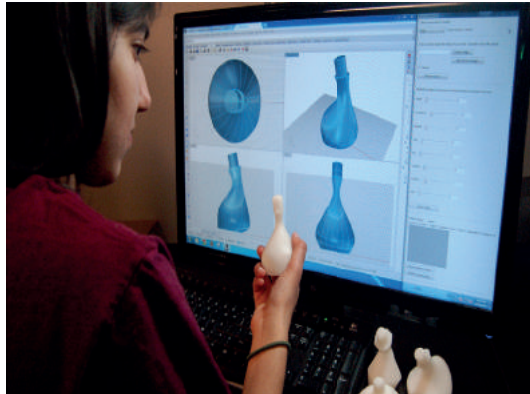


Figure 5.3.3 Perception of Form in Laboratory condition⁴⁶

⁴⁵ <http://www.qub.ac.uk/mil/>

⁴⁶ <http://www.qub.ac.uk/mil/>

One of these principles is proximity: the closer two elements to each other, the more human tend to group them together in perception. This principle is called the continuation or continuity. If the outline of a shape is discontinuous, then human tend to like to fill them, to complement the shape to complete image. This principle is called closure.

Man is able to easily recognize even heavily modified images. For example, individual finds a familiar melody, even if it is played on another instrument.

5.4 Involuntary and Voluntary Perceptions

There is involuntary and voluntary perception depending on the degree of focus of the individual activities. Involuntary perception may be due both to the features of the surrounding objects, and matching these items due to individual's interests and needs. Voluntary perception involves goal setting, application volitional effort, a deliberate choice of the object of perception.

Thus, human perception is only the first stage of knowledge, the initial stage of acquaintance with the subject, which is evaluated whole environment. Also human perception of the world is extremely subjective; it depends not only from the object but also from human emotions, desires and mood.

Control questions:


1. Why Integrity of Perception is necessary for individual?
2. Compare Constancy and Reflection of Perception.
3. Analyse Objectivity of Perception.
4. Explain why perception determines other cognitive processes.
5. How Categorization relates with thinking?
6. Give examples for illusions.
7. What kind of features of perception do you know?
8. Compare involuntary and voluntary perceptions.
9. Give examples for voluntary perceptions.
10. What are the main differences between sensation and perception?

CHAPTER 6. ATTENTION AND MEMORY

6.1 The Concept of Attention

Attention is a part of human consciousness which is included in perception, in the memory, thinking and imagination. The presence of attention in human activity makes it productive, organized and active.

Attention it is focusing on something that has a certain value for individual. From this definition, it follows that attention does not have its own product; it only improves the results of other psychological processes. Attention is inseparable from other mental processes and states.

 **Attention – focusing the apparently limited capacities of consciousness on a particular set of stimuli more whose features are noted and processed in more depth than is true of nonlocal stimuli.⁴⁷**

Attention has been a focus of research since the 1960s, and numerous models have been generated noting certain features of attention and then been found wanting. Important features of attention include limited capacity, focus, and differential processing of focal and nonlocal stimuli, leaking of information from nonlocal stimuli into awareness, effect of expectations on attentional focus and perception, and cultural differences in attentional patterns.

Concept of attention was developed in psychology of consciousness. Attention served as a tool for mental experiments. Using an objective experimental method, W. Wundt found that the simple reaction to visual and auditory stimuli not only depends on external stimuli characteristics, but also depends on individual relation to stimulus. By W. Wundt content of consciousness is perception, and focusing on stimulus is attention or apperception.

Gestalt psychologists believed that the objective structure of the field determines individual's perception on objects and events. Behaviorists rejected attention and consciousness as the main concept of psychology of consciousness. They tried to develop several more precise terms, which would allow, using rigorous quantitative characteristics objectively describe relevant psychological processes. However, after several years, the concept of “consciousness” and “attention” back to psychology (Velichkovsky B.M., 1982).

⁴⁷ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 59

To describe the concept of “attention”, psychologists took decades of experimentation and observation. In modern psychology it was decided to allocate the following criteria for attention:

1) External reactions are motor, autonomic, providing conditions for a better perception of the signal. These include turning the head, fixing the eyes, facial expressions and posture of concentration, breath-holding, vegetative components of the orientation reaction;

2) Focus on the implementation of certain activities. This is the main criterion for the “activity-related” approach to the study of attention. It is connected with the organization of activities and the supervision of its implementation;

3) Increasing the productivity of cognitive and executive activities;

4) To select information. This criterion is expressed in the possibility of actively perceive, memorize, analyze not only part of received information, as well as to respond only to a limited number of external stimuli;

5) Clarity and distinctness of consciousness contents, being in the field of attention.

Through various approaches psychologists focus on various forms of attention: vegetative reactions during information selection; monitoring implementation of the activity; state of consciousness. By Russian psychologist N.N. Lange there are objective and subjective sides of attention. However, if to summarize the whole phenomenology of attention, it is possible to come to the following definition.

Attention is selection right information, the provision of electoral programs of action and maintaining a constant monitoring of their occurrence (A.R. Luria, 1975).

6.2 Types of Attention

There are many different classifications of attention:

William James points out the following pairs of attention, guided by three bases:

1) sensory and mental (intellectual);

2) directly, if the subject is interesting in itself, and indirect;

3) Involuntary or passive, effortless, and arbitrary (active), accompanied by a feeling of effort.

Classification, associated with will, is the most traditional. Dividing attention to voluntary and involuntary was Aristotle’s idea, and a complete

and comprehensive description of these varieties had been done already in the XVIII century. Later, this division has received a serious theoretical foundation in the works of T. Ribot and H. H. Lange. Sources of voluntary attention are entirely determined by subjective factors.

Involuntary attention occurs unintentionally, without any special effort.

Voluntary attention is clearly expressed, conscious, and willful and helps perform any activity, it attracts and retains despite the factors of involuntary attention.

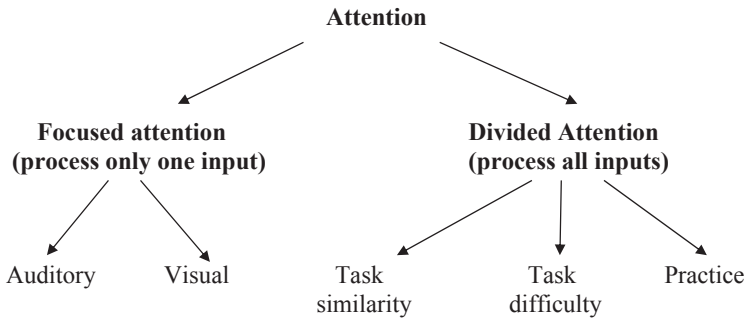


Figure 6.2.1 Types of attention 1

According to Figure 6.1 there are focused attention and divided attentions. In this case, focused attention is a state of concentrating on significant stimulus from environment excluding others in order to avoid distracted information during analyzing the stimulus and avoid overload state by noticing all stimulus. Where divided attention help perform multitasking activity going on at once. For example, during talking with someone individual could read a book.

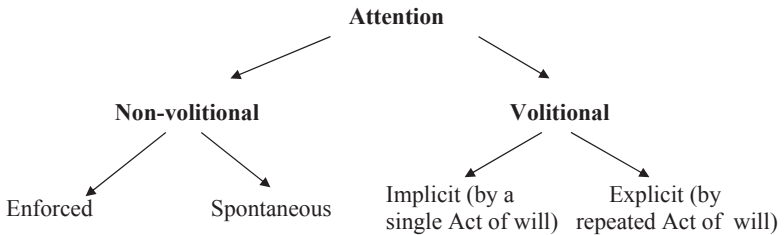


Figure 6.2.2 Types of attention 2

Non-volitional attention aroused by individual's interests, emotions or

reflexes towards some stimulus. Volitional attention relate with a power of making choices or decisions between stimulus, tasks, interests etc. regarding this type of attention individual could pay attention for solving problems, for instance, to deal with mathematical equation.

6.3 Basic Properties of Attention

By properties (or characteristics) of attention include its concentration, distribution, volume, switching and stability.

1. Attention is characterized by intensity of concentration. Deep concentration is useful in solution a difficult problem.

2. The distribution of attention is an organization of mental activity in which two or more actions are performed simultaneously. For example, it is easy to combine simple hearing speech content and some manual work.

It is more difficult to carry out two types of mental tasks which produce a state of emotional tension.

3. The volume of attention. It is the number of unrelated objects which can be perceived clear and distinct by individual. The wider scope of attention then the greater the perceived objects in a single point in time.

4. Switching of attention is a conscious, deliberate, purposeful change of activity, due to new goals.

5. Stability of attention (vigilance) is the extent and duration of concentration of attention. These factors of stability of attention are:

- Relation between individuals needs, interests with information;
- Content and difficulty of performed activities;
- Awareness of the importance of activities;
- Individual psychological features of individual, such as temperament or personality traits, etc.

6.4 Theoretical Models of Attention Research

There are various models of attention in psychology.

Attention as activity

S.Y. Rubinstein thought that attention is a side of cognitive processes and it is closely associated with activity.

N.N. Dobrynin also considered that attention is a form of activity manifestation.

Attention and control function

This aspect of the study of attention considered partially in the chapter on voluntary and involuntary attention. Let us examine this in more detail.

By L.S. Vygotsky attention is associated with ability to control individual's own behavior.

Vygotsky's ideas were continued and developed by P.Y. Galperin. He considered that attention is only internal control of behavior.

Attention and activity

By A.N. Leontiev, Y.B. Gippenreiter and other scientists' attention can be revealed only through analysis of activity. They believed that attention is only a reflection of internal mental activity in the psyche. Attention functions, included in activation of mental and physiological processes, are necessary to focus on activity goals.

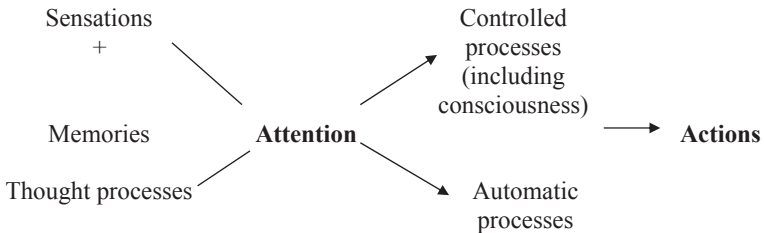


Figure 6.4 Relation of Attention with Activity

6.5 The Concept of Memory

Memory is one of the human higher mental functions that are closely related to the others. There are several classifications of types of memory depending on its nature.



Memory – 1) any relatively lasting storage of information in the brain, which is currently hypothesized to involve processes of encoding, storage, and retrieval of the information. This includes numerous kinds of information and different storage processes including that necessary for remembering a specific event, knowledge in general, and knowledge of how to do things like see, move in a coordinated way, and ride a bicycle. 2) A specific recollection of an experience or some factual information. 3) The hypothetical storage system or systems for information of different kinds.⁴⁸

⁴⁸ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 303

The higher functions of the brain are directly connected with biological memorization, recalling and saving information. There are two types of memory related to *psychophysiological* basis of Memory:

1. Genetic memory is biological information about organisms recorded (encoded) in the DNA molecule.
2. Individual memory relate with human development and organisms' adaptation to the environment.

Structural and functional organization of Memory. Memory is provided by the operation of a multi-level system of brain structures. The Hippocampus is involved in the processing of information between short-term memory and long-term memory. The Amygdala plays leading role in emotional memory and its regulation. Both hippocampus and amygdala are closely linked to the temporal cortex, which is regarded as a “repository” of long-term memory.

The frontal areas of the cortex system help transferring information into the working memory during organization of goal-directed behavior.

Memory is a complex in its structure cognitive mental process consisting of several stages. There are several models of memory, which have been developed in Psychology. After the William James idea, N.C. Waugh and D.A. Norman in 1965 suggested dividing memory in different types: primary memory that allow currently use a temporary information and secondary memory, which save information for a long period. In 1968 R. Atkinson and R. Shiffrin created alternative information processing model by using memory. In 2000 C.S. Brown & F.I.M. Craik identified encoding, storage, and retrieval as three operations of memory. Each operations represents in stores of memory processing (See figure 6.5.1):

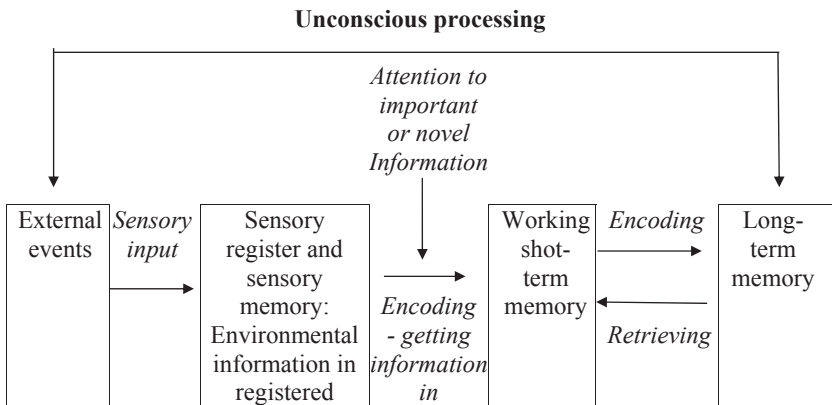


Figure 6.5.1 Stores of Memory by R. Atkinson – R. Schiffrin and operations of memory by C.S. Brown and F.I.M. Craik

Memory unites all other processes of the human psyche into a coherent whole.

The role of the memory not only saves past information. After all, any action in the present needs memory processes because it is necessary to remember information before exact reaction on it.

Memory as the system of information organization processes can be considered as a substructure of Intelligence, because basis of Intelligence is an interaction of cognitive abilities and knowledge available to the individual. It is clear that each knowledge directly related with memory.

Being the most important characteristic of all mental processes, memory ensures the unity and integrity of the human person. One of important characteristic of memory is its' productivity. In order to understand of productivity of memory it is necessary to explain main processes, which involve in.

Productivity of memory is related with next processes:

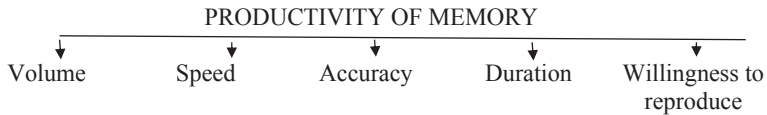


Figure 6.5.2 Processes of the productivity of memory

1. Volume of memory characterizes the ability to save simultaneously a considerable amount of information. The average amount of memory is nearly seven cells (units) of information.

2. The speed of memory means how fast information can be saved. Using special memory training can increase speed of memory.

3. The accuracy is related with recalling facts and events as well as recalling the content of information. This feature is very important in learning processes.

4. Duration of memory is ability to keep information for a long time. This feature is very individual quality. For instance, people may remember the faces and names of school friends many years later due to developed long-term memory, some of them may forget this information after only a few years. In addition, duration of memory is very selective process.

5. Willingness to reproduce is the ability to reproduce quickly the information in the human psyche.

6.6 Types of Memory

There are also different classifications of types of human memory by:

1. Role of volitional processes in the process of remembering;
2. Leading mental activity, which is involved in performance?
3. Duration of saving information;
4. Characteristics of object and methods of memorization.

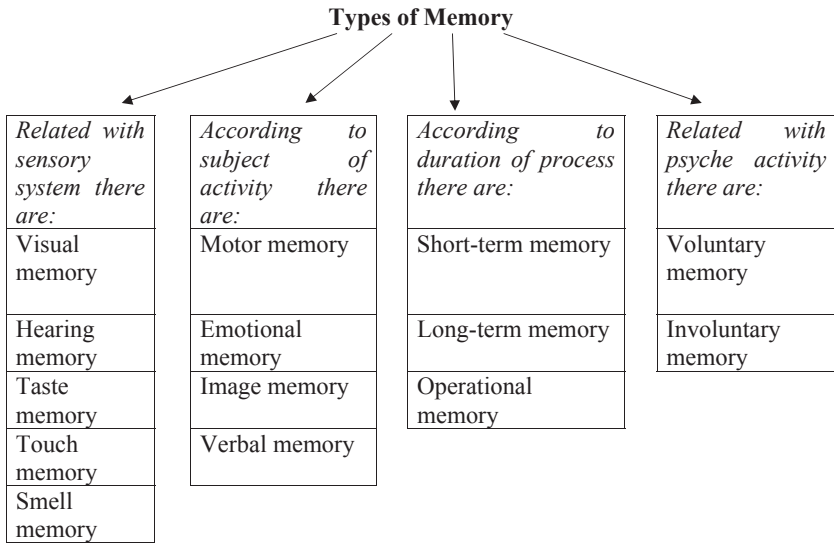


Figure 6.6 Types of Memory

Below there will be considered these types in the order.

Classifications of types of human memory by role of volitional processes in the process of remembering. Memory is divided into involuntary and voluntary types which depends on activity goals:

Involuntary Memory is related with memorizing and recalling processes, in which there is no special purpose, something to remember or recall. It is proved that interesting material involuntarily memorized.

I.P. Zinchenko (1961) conducted a series of experiments aimed to study of voluntary and involuntary memorization. The experimenter unexpectedly asked subjects to recall everything they remember on the way from home to work. The study found that the subjects most often remembered:

- What they did (not what thought);
- That contributes to or hinders the goal;

- Something strange and unusual;
- That was associated with the range of knowledge and interests of the subject.

I.P. Zinchenko compared the productivity of involuntary memory of the same material, depending on the place occupied by this material in the structure of activity (motive, purpose, method of performing activities). Result was that material related to the purpose is remembered better than the material related with conditions of purpose achievement. In this case background stimuli remembered the worst.

I.P. Zinchenko also investigated the features of memory, depending on how active and meaningful was the mental performance. The subjects were given the task to mechanically memorize words or find a rational connection between the words. It was shown that better memorized words positively correlate with their content and with recourses required to words comprehension. Therefore, psychologists concluded that involuntary memory depends on motives of work performance.

Voluntary Memory focused remembering information using power of will. By another words it means that human memorize only information what is really needed and necessary. The study of this aspect of the memory process has also been the subject of many experiments. The role of mnemonic resources in the organization and functioning of the mnemonic system was examined from the 1960s. A.A. Smirnov (1966) found out that external memory plays significant role in mnemonic function. The terms of “internally and externally mediated memory” were introduced by A.N. Leontiev (1972). V.Y. Liaudis (1976) showed that first signs are used to external regulation of internal plan of representations, and then this signs interiorized and begin to carry out the regulatory function in memorization and recall processes during memory development among children.

There are implicit and explicit memory that also referred to volitional processes in the process of remembering and recalling.

Implicit Memory is unconscious memory without awareness of information remembering.

Explicit Memory is characterized by awareness of information remembering.

Explicit and Implicit Memory We’ve now considered several ways that explicit memory might be subdivided into:

- ◊ Episodic memory
- ◊ Semantic memory.

Then with each of those categories potentially divided further. However, what about implicit memory?

The concept of implicit memory have been found not only in motor learning, but also in a broad class of problems, which is used in the paradigm of imprinting. For example, the researcher suggested the test with series of photographs depicting women with long and short hair. Demonstration photos of women with long hair are accompanied always by a story about her kindness.

Classifications of human memory types by leading mental activity, which are involved in performance.

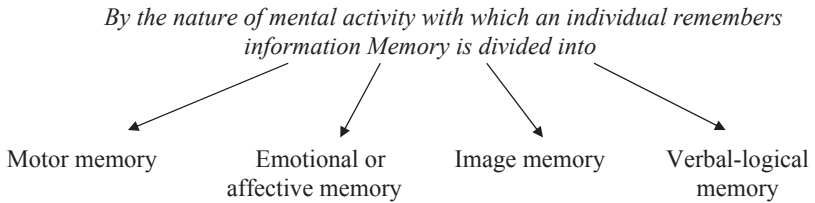


Figure 6.6.1 Classifications of human memory types by leading mental activity

Motor Memory is characterized by saving and recalling of various movements and their systems during activity. Without movement memory people should have every time to learn, to walk, to write, etc. This memory is actively involved in the development of motor skills. All manual movement associated with this memory. This memory firstly manifests in normal development of the child.

Emotional Memory is related with emotions, feelings, emotions. Emotions always signalize individuals about level of satisfying their needs and interests. Main role of experienced feelings and emotions, which are stored in the memory, is to allow or not to act in each situation. The ability to empathize to other person is also based on emotional memory. Often, the emotional memory is stronger than other types of memory. Especially this kind of memory is manifested in human relations. As a rule, what makes a person emotional distress, remembered them easily and for a long time. It is proved that there is a connection between the pleasantness of the experience and how it is held in memory. Pleasant experiences are held much better than unpleasant. Human memory is generally optimistic by nature, and generally human tend to forget unpleasant memories about terrible tragedy over time. This type of memory is significantly important for human motivation. That is why emotional memory starts to develop during infancy period.

The image memory is related with representations, pictures of nature, as well as sounds, smells and tastes. Individual receives information through different senses: vision, hearing, smell, touch and taste. Accordingly

distinguished visual, auditory, olfactory, tactile and gustatory memories. For instance, some people are able to evoke in their psyche very vivid memory of the images, which are detailed and clear.

a) Visual Memory is linked with saving and recalling of visual images. People with well-developed visual memory usually have well-developed imagination and are able to “see” the information, even when it has no effect on the senses. Visual memory is very important for people of certain professions: artists, engineers, designers.

b) Auditory Memory is a good memorization and accurate recalling of a variety of sounds: voices, music, etc. For example, this memory is especially necessary in the study of foreign languages.

c) Tactile, Olfactory and Gustatory Memory does not play a significant role in human life, because the possibility of such memory is very limited and its role is the satisfaction of the biological needs of the organism. These memory types are developed especially in people of certain professions, as well as in special circumstances (Classic examples: born blind and deaf-blind).

Verbal-Logical Memory consists with memorizing thoughts, concepts, judgments, reasoning, reflecting the essential connections and relationships of objects and phenomena, their general properties. Thoughts do not exist without language, so the memory of them is called not just logical, but verbal-logical. Verbal and logical memory is present only in human being.

In this case, individual tries to understand assimilate information, clarify terminology, to install all semantic links in the text, and only after that to remember the material. People with well-developed verbal-logical memory can easier remember a verbal information, abstract material, concepts, and formulas. Scientists, as well as experienced lecturers, university professors have this type of memory in conjunction with the auditory memory. The logical memory at its training gives very good results, and more effective than simple memorization. Some researchers believe that this memory begins to “work” later than other types of memory.

3. Classifications of types of human memory by duration of saving information:

1) Immediate or Iconic Memory holds the material that has just been received by the senses, without any processing of the information. The duration of this memory from 0.1 sec. to 0.5 sec. Often individual remembers information without conscious effort, even against their will.

Individual receives electromagnetic waves, air pressure changes, a change in position of an object in space etc. Stimulus always carries certain information that is specific only to individual. Acting on a receptor in the sensory system, the physical stimulus parameters are converted to certain condition of the central nervous system (CNS). The mapping between the physical para-

meters of the stimulus and the condition of the central nervous system is doing not possible without the work of memory. This memory manifests itself in children as early as the preschool years, but over the years, its value to humans is increasing.

2) Short-Term Memory is characterized by very short time of saving after one very short perception and immediate recalling (in the first few seconds after the perception of exact material). Information are saved in the short-term memory during more than 20 seconds.

In 1956, J. Miller suggested that short-term memory is kept constant number of short-term memory units. The volume of adult short-term memory is fixed, whether it is visual information units (letters). This volume has become known as the “magic number” equal to 7 ± 2 . This value changes with age. Volume of memory from two to ten years increases from 2.5 to 5 units.

Short-term memory is like a picture of objects that affect the senses. Short-term memory is associated with a primary orientation in the environment and therefore mainly aimed to fixing the total number of emerging signals regardless of their information content. Short-term memory works without a conscious effort to remember.

Features of short-term memory:

– Attention to information helps to enter this information into short-term memory.

– The volume of short-term memory is very individual, and there developed formulas and methods to measure it. In this connection, it must be said about its characteristics such as the “Replacement”. When individual memory becomes full, the new information replaces the part already stored there, and the old information is often irreversibly disappeared. A good example may be the difficulty in memorizing the abundance of people names with whom we have just met.

– By doing conscious effort, it is possible to keep the information in memory for a long time. Repeating something is the basis for this type of memory. Short-term memory plays an important role in human life. Regarding to short-term memory there are a huge amount of information are processed. Short-term memory is organizing human thinking, because thinking “draws” the information and facts because of working memory and short-term memory.

3) Running or Working Memory can store information for certain, pre-determined period. Saving such information ranges from several seconds to several days. After solving the task information may disappear from memory. A good example would be information that is trying to put a student on the exam: clearly defined time period and goals. After passing the exam there is can be complete “amnesia” on the issue. This type of memory is Transition Bridge from short-term to long-term.

4) Long-Term Memory store information for a long period. This memory starts functioning immediately after having been memorized material, but sometimes later. The more often the information is recall, than the stronger it is saved in the memory. In other words, individual may at any time to recall the desired information through the efforts of will. It is interesting to note that the mental abilities are not always an indicator of quality of memory. For example, a weak-minded people sometimes have a phenomenal long-term memory.

6.7 Main Mnemonic Processes

Human memory is active process because each time relate with human activity.

Memory processes include memorization (fixing), recalling (updating, renewal), as well as storage and forgetting information. Regarding this processes it is possible to understand connection between memory and activity.

1. Memorization. This is memory process, which make possible to include new information in psyche by linking it with the previous one. In this case, information is remembered better, if it relate with main goals of human activity.

There are a few features of involuntary and arbitrary memorization (Table 6.7).

Table 6.7 Features of involuntary and arbitrary memorization

Involuntary memorization	Voluntary memorization
<ul style="list-style-type: none"> • Information involuntary better remembered if it is included in active human mental work. It was found that very light text is stored worse, than difficult one. • Information involuntary better remembered if it is particularly important and related with human interests and emotions. 	<ul style="list-style-type: none"> • The voluntary memorization directly depends on motives. • Voluntary memorization flows more effectively by using rational remember methods. • Information is remembered faster and stronger if it is nearly similar with previous already assimilated knowledge.

2. Storage. This mnemonic process characterized by long-term saving of perceived information in a hidden state. The storage unit has its own patterns and determinants. There is a characteristic of storage duration. The psychological literature describes the dependence of storage from:

- Individual attitudes;
- Conditions and an organization of learning material;
- Mental information processing.

Any information stored in general form excludes some additional units and textual content.

3. Recalling. This is a memory process, which helps transfer information from long-term memory to operational memory.

Recalling process includes recognition, retrieval (voluntary and involuntary) and remembrance processes also:

a. Recognition is related with process of comparison between new information with stored one in memory. Recognition will be complete when information spontaneously, without any effort gets from memory. Recognition is incomplete when information only partially gets from memory. For instance, when individual experiencing a “sense of the familiar,” but it is difficult to identify this information from memory;

b. Retrieval (voluntary and involuntary) process is work without re-perception of the object, which is reproduced;

c. Remembrance is reproduction of significantly past information in memory, which accompanied by a range of emotions.

Retrieval

When we learn, we transfer information into long-term memory, and then we consolidate this newly acquired information. But we still need one more step in this sequence, because memories provide no benefit for us if we can't retrieve them when we need them. Hence **retrieval** – the step of locating and activating information in memory – is crucial. Moreover, the success of retrieval is far from guaranteed, and many cases of apparent “forgetting” can be understood as *retrieval failures* – cases in which the information is in your memory, but you fail to locate it.

Partial Retrieval

Retrieval failure can be documented in many ways – including the fact that sometimes we remember *part* of the information we're seeking, but we can't recall the rest. This pattern can arise in many circumstances, but it's most clearly evident in the phenomenon psychologists call the **tip-of-the-tongue (TOT) effect**.

Try to think of the word that means “to formally renounce the throne.” Try to think of the name of the Russian sled drowner by three horses. Try to think of the word that describes someone who, in general, does not like other people. Chances are that, in at least one of these cases, you found yourself in a frustrated state: certain you know the word but unable to come up with it. The word was, as people say, right on the “tip of your tongue.”

People who are in the so-called TOT state can often remember roughly words sounds – and so, when they're struggling to recall *abdicate*, they might remember *abrogate* or *annotate* instead. Likewise, they can often recall what letter the word begins with, even though they can't recall the word itself

(A. Brown, 1991; R. Brown & McNeill, 1966; Harley & Bown, 1998; L. James & Burke, 2000; B. Schwartz, 1999).

4. Forgetting. This process characterized by a gradual decrease in the possibility of recalling and retrieving exact information from memory. It is known that some of the information can be “suppressed”, while others cannot be intentionally forgotten.

There are many reasons why we sometimes cannot recall past events. In many cases, as we’ve noted, the problem arises because we didn’t learn the relevant information in the first place! In other cases, though, we learn something – a friend’s name, the lyrics to a song, the content of the Intro Bio course – and can remember the information for a while; but then, sometime later, we’re unable to recall the information we once knew. What produces this pattern? One clue comes from the fact that it’s almost always easier to recall recent events (e.g., yesterday’s lecture or this morning’s breakfast) than it is to recall more distant events (a lecture or a breakfast 6 months ago). In technical terms, recall decreases, and forgetting increases, as the retention interval (the time that elapses between learning and retrieval) grows longer and longer. This simple fact has been documented in many studies; indeed, the passage of time seems to work against our memory for things as diverse as past hospital stays, our eating or smoking habits in past years, car accidents we experienced, our consumer purchases, and so on (Jobe, Tourangeau, & Smith, 1993). The classic demonstration of this pattern, though, was offered more than a century ago by Hermann Ebbinghaus (1850-1909). Ebbinghaus systematically studied his own memory in a series of careful experiments, examining his ability to retain lists of nonsense syllables, such as *zup* and *rif*. (Ebbinghaus relied on these odd stimuli as a way of making sure he came to the memory materials with no prior associations or links; that way, he could study how learning proceeded when there was no chance of influence from prior knowledge.) Ebbinghaus plotted a forgetting curve by testing himself at various intervals after learning (using different lists for each interval). As expected, he found that memory did decline with the passage of time. However, the decline was uneven; it was sharpest soon after the learning and then became more gradual (Ebbinghaus, 1885). There are two broad ways to think about the effect of retention interval. One perspective emphasizes the passage of time itself – based on the idea that memories decay as time passes, perhaps because normal metabolic processes wear down the memory traces until they fade and finally disintegrate. A different perspective suggests that time itself isn’t the culprit. What matters instead is new learning – based on the idea that new information getting added to long-term memory somehow disrupts the old information that was already in storage. We’ll need to sort through why this disruption might happen; but notice that this perspective, too, predicts that longer retention intervals will lead to

more forgetting – because longer intervals provide more opportunity for new learning and thus more disruption from the new learning. Which perspective is correct? Is forgetting ultimately a product of the passage of time, or a product of new learning? The answer is both. The passage of time, by itself, does seem to erode memories (e.g., E. Altmann & Gray, 2002; C. Bailey & Chen, 1989; Wixted, 2004); but the effect of new learning seems larger. For example, Baddeley and Hitch (1977) asked rugby players to recall the names of the other teams they had played against over the course of a season; the researchers then systematically compared the effect of time with the effects of new learning.

Thus, T. Ebbinghaus first investigated the forgetting process. By the experiments, T. Ebbinghaus found out forgetting index and built the famous curve of forgetting by including the value to additional number of correctly reproduced words.

All memory processes are selective. For example, human forgets meaningful material slowly.

The inability to remember any information does not mean that it forgotten completely. According to the theory of R. Atkinson, individual forget nothing, but information goes into long-term memory.

6.8 Theories of Memory

The experimental study of memory began in the late XIX century. There were two approaches that start to explain main features of Memory.

1. Monistic approach that developed in **associative psychology**, and later in behaviourism. According this approach memory has no different types, but only varying degrees of association strength between processing of signals and recalling information.

The monistic view on memory was developed by experimental procedures. The main requirement in such experiments was the qualification of conditions, where produces and enhances the associations (or connection between stimulus and response). This experimental procedure was criticized, because of specific explanation of memory processes where psychological phenomenon of memory became equal to physical stimulus duration until recall processes.

2. Multiple (dual) approaches. Another interpretation of the memory has been developed in the **psychology of consciousness**. William James using primarily data from introspection identified the primary and secondary storage. Primary memory content is an experience, directly present in the psyche. This memory has a transitory nature, its content quickly erased and forgotten. The content of the secondary storage is our constant knowledge. Later, these two

types of memory (primary and secondary) are called short-term and long-term memories.

Norbert Wiener continued this idea in 1948 by dividing current and on-going memories. Psychologists picked up this idea in 1950 by allocation of short-term memory and long-term memory. Around the same time, there were developed concepts such “working memory”, “registers” and “buffer” etc.

Broadbent in 1958 proposed a model of cognitive processing, where the perceptual information arrives to sensor registers. Then information corresponds to different signal modalities where they kept a very short time (a few hundred milliseconds) and then passed to the next block, which is already transcoding in verbal form. This block corresponds to the short-term memory. The probability of transition of information from short-term memory into long-term depends on the depth and quality of its processing.

3. Functional approach. Despite the successful development of memory models by using the computer metaphor, it became clear that the analogy between information processing in the human and the computer is not satisfactory. First of all, the researchers found out that effectiveness of mnemonic systems depend on influence of variables such as motivation, interest, attention etc. Scientists started to include functional components in the structural model of memory. In 1974 A. Beddli and J. Hitch created model of working memory. This system consists of three components: the central executive processor and two “slave systems”, one of which specializes in the processing of verbal material and the second one is related to the spatial visual memory. According to the model in first system automatically maintained a certain amount of information. This amount depends on the time required for the vocalization verbal material, and is approximately 1.5-2 seconds. Therefore, the memory capacity can be expressed through total duration of pronunciation. Numerous experiments were shown that suppression of articulation entails a reduction in memory capacity.

D.A. Oshanin (1977) developed the idea of an operational image as working memory in visual modality. Operational image formed when performing specific activities. Its content is not isomorphic to sensory information. Operational image include main characteristics of the object.

V.P. Zinchenko found out that the formation of perceptual image is deployed in time and includes a number of perceptual processes. This process starts from extraction of objects’ features and ending with the actual construction of the image. This image performs the operational function, including management of the specific executive action.

Control questions:

1. Why attention depends on sensation?
2. Are there any individual difference in human attention?
3. Explain main roles of attention in human interactions.
4. Compare concentration, distribution, volume, switching and stability of


Attention

5. Analyze attention as activity
6. Explain how attention plays a role of control function in performance.
7. Analyze attention and activity
8. Compare structural and functional organization of memory
9. How attention and memory relate with each other?
10. Why forgetting process is necessary for each organism?

CHAPTER 7. IMAGINATION

7.1 The Concept of Imagination

Imagination also as other sensory systems reflects the real world, but in new, unusual, unexpected combinations and relationships. Imagination differs from the image memory (representation), because it dynamically creates new images without act of remembering and recalling. Imagination is related with thinking because by analytic-synthetic activity of the brain individual can imaging new things by combining old objects in a new way. For example, mermaid is a result of imagination.

 **Imagination is the act or process of imagery, especially or generating mental images of stimuli that are being or have never been experienced in perception.⁴⁹**

It is possible to distinguish four types of representations in imagination:

1) Images are related with real objects and phenomena. For example, individual may image himself in the Sahara desert, even if he has never been there. But this exact image is related with sense of really existing there;

2) Historical images. For instance, individual can imagine how prehistoric man or saber-toothed tiger looked like;

3) Fabulous images, which relate for example with Russian personage of “Baba-Yaga”, “Serpent-dragon”, etc.;

4) Images of the future, for example how will look like a car in XXII century

Imagination cannot occur in a vacuum, it requires converting obtained perceived information to new one. For example, fairy-tale “Baba-Yaga” is just a scary old lady with a hooked nose, and her hut is also made up of familiar parts (cottage + chicken feet).

Imagination, like other many mental processes, is a function of the cerebral cortex. This is a complex analytic-synthetic activity of the brain. The basis of the imagination is the work not of isolated nerve centers, and the whole of the cerebral cortex. Creating images of imagination – the result of joint activities of the first and second signaling systems, although any image, any representation formally should be referred to the first signal sensory reflection of reality. Therefore, the images of the imagination constitute a special form of reflection of reality, peculiar to man. Scientists in field of Bionic often create new technique based on natural objects and phenomena.

⁴⁹ The Oxford Dictionary of Psychology. Third edition. Andrew M. Colman. Oxford University Press 2009. P. 366



Figure 7.1 Imagination technique based on natural objects⁵⁰

Regarding to imagination individual has skills to design plans his activity and to manage it. Imagination helps in those situations when it is impossible or difficult to act practically.

Thus, without imagination it would not be possible to make progress in any fields of human activity.

Imagination helps for human when he faces with thinking of difficulties in order to analyze data during task of performance. However, ways of solving problems using imagination is not enough precise. This is an imagination limitation.

Imagination must be distinguished from hallucinations.

Hallucinations – sensory perception in the absence of any external stimulus. Hallucinations can be auditory, visual, tactile, olfactory, or gustatory; auditory hallucinations are by far the most common. Hallucinations are most commonly seen in the psychotic disorders, specifically schizophrenia.⁵¹

7.2 Functions of Imagination

1. Imagination performs primarily cognitive function because it requires concentration, memory and thinking. Imagination occurs in problematic situations with lack of information and certainty. In addition, certain images can influence perceptions, memories, thoughts and feelings.

2. The second function is regulatory function. This function organizes new

⁵⁰ <http://www.yankodesign.com/2009/06/03/ten-inspirational-and-creative-bionic-designs/>

⁵¹ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 229

form of individual's behavior; regulates cognitive processes; it helps to plan and regulate activity by anticipation (predicting) it's results, which is related to process of "jumping" through a stage of thinking and decision-making to stage of absence of full knowledge. Phenomenon of anticipation (lat. anticipation – the prediction of events) is the ability of a person predicting the results of actions before they are implemented or received ("anticipatory reflection"), and readiness for upcoming events based on previous experience.

3. Motivational function of the imagination by which individual can meet their needs. For this reason human like to create cartoons, fairy tales.

4. Affective function of the imagination. Because it is involved in the regulation of emotional states (enhances the emotional tone, improves mood, relieves stress) in situation when needs are not satisfied. Children's imagination performs affective-protective function in order to protect them from excessive suffering and emotional trauma by symbolic resolution of the conflict.

5. Imagination participates in volitional regulation of behavior by participating in planning activities, evaluation of the accuracy of their execution progress.

6. By imagination individual is able to perform actions by images of objects in the psyche, not manipulating with real objects.

7. Imagination gives possibility for individual to regulate his physiological states, tuning in to the upcoming events. Widely known facts that by imagination can change rhythm of breathing, blood pressure, pulse rate, body temperature etc.

Thus, there are a lot of functions of the imagination which help individual to solve many actual problems and often rely on our subconscious.



Figure 7.2 Perspective of Imagination⁵²

⁵² <http://www.seodirect.org/wp-content/uploads/2012/07/perception-31.jpeg>

7.3 Types of imagination

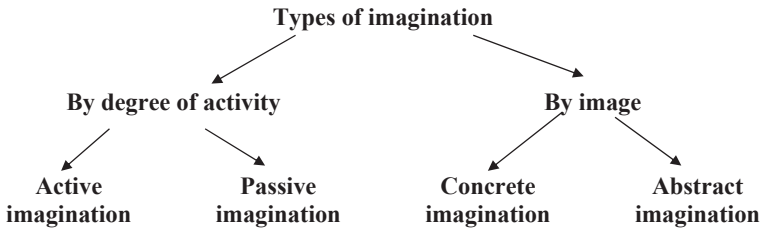


Figure 7.3 Types of imagination

Active imagination is characterized by individual's effort to cause the appropriate images. Imagination recreates the form of knowledge by new images based on descriptions, diagrams, drawings, mental and material models.

Passive imagination occurs spontaneous, without a predetermined goal.

Creative imagination allows person independently to create new ideas or non-existent objects that are unlikely to real one.

Productive imagination is the kind of imagination by which human can deliberately construct environment without mechanically copy or re-creating.

Reproductive imagination base on perception or memory in order to reproduce the reality as it is, with some elements of fantasy. In this case, content of imagination deeply reflects the reality.

Dreams, fantasies create unrealistic images in order to drawing pleasant, desirable picture about future life.

Specific imagination creates real and specific natural images. For example, paintings of painter.

Abstract imagination is creation of generalized, schematic, symbolic images. For example, the art of the Impressionists, Cubists, etc.

7.4 Basic Properties and Techniques of Imagination



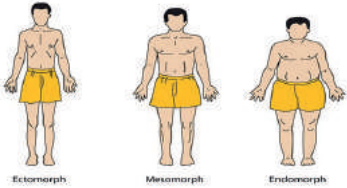



Imagination provides creative human activity.

Properties of the imagination:

1. The power of imagination characterized by the degree of brightness of arising images.

2. Breadth of imagination is determined by the number of images which can be creating.

Table 7.5 The techniques of creative imagination

<p>Combination (agglutination) is creation of new images based on «gluing» as combining separate ideas into a unified whole.</p>	
<p>Accentuation – underline particular features, often the most significant characteristic features of the image. This method is often use in caricatures, cartoons.</p>	
<p>Typing the synthesis of significant qualities and properties in a specific image.</p>	
<p>Schematization is an image of particular view on similarities between objects.</p>	
<p>Hyperbola is increasing of all features of character. For example, giant, three-headed snake.</p>	
<p>Litola understatement of features of the character, image or its parts, etc.</p>	

7.5 Theories of Imagination

The main problems that scientists face are the nature and mechanisms of the imagination. It differs from other mental functions, especially of thinking, communication and perception.

Associative psychology tried to explain imagination by other mental processes such as memory. Associative psychology also explained creative imagery as a kind of random combinations of elements. Idealism, for example, argued that the creative imagination inherent in our consciousness.

L.S. Vygotsky criticized all these ideas about the imagination and put forward a number of new provisions about the nature of imagination, which was absorbed in the study of imagination in childhood. The main idea of L.S. Vygotsky refers to the ratio of thinking and imagination. He showed that thought antagonistically is opposite to imagination. Imagination is relatively autonomous activity of consciousness, which differs from the direct knowledge about reality.

7.6 Development of Imagination

As perception, memory and attention, imagination gradually transformed from direct to indirect. As was shown by A.V. Zaporozhets, there model representation and sensor standards are the primary means of child imagination.

Child's creative imagination develops quite quickly by the end of the preschool period. Their imagination is presented in two main forms: as the product of certain ideas and emergence of its implementation.

Regarding imagination, a child efficiently solves each challenging task.

First stage of development of imagination is associated with the process of realization of action. Through this process, a child learns to manage their images by changing, clarifying and improving them. This ability appears in children only at 4-5 years.

Affective imagination developing in children aged from 2 to 5 years. Initially children's negative emotions express symbolically in imaginary situation.

Finally, the third stage of development of this function develops the ability to relieve emotional tension through the mechanism of projection. By projection unpleasant knowledge about themselves attributed to other people, objects and animals.

Imagination develops in close connection with personality, during process of training and education, as well as in unity with the thinking, memory, will and feelings.

It is very difficult to determine any specific age limits that characterize the dynamics of imagination. There are examples of very early development of imagination. For example, Mozart started to compose music at four years.

Despite the difficulties of defining development stages of imagination, there are certain regularities in its formation. First manifestations of imagination are closely linked with the process of perception. For example, children under the age of eighteen are not yet able to listen even the most simple stories or tales. They are constantly distracted or fall asleep, but happy to listen these stories. This phenomenon explain link between imagination and perception. A child listens to a story about their experiences because that is clearly, what was going on. First child imagination always associated with activity.

An important stage of imagination development is age when child starts of speech. It allows including abstract representations and concepts in imagination. Moreover, it allows the child to move from expressions of imagination in activities to directly expression in speech.

The sensitive period of development of imagination is preschool age.

For the development of imagination, however, certain conditions are necessary: the presence of uncertain situations, the development of thinking (e.g., ability to see the whole before the parts; ability to transfer one object to another one, etc.), certain types of activities (game, drawing, modeling, etc.).

Control questions:

1. Why Imagination is a sensory system?
2. What kind of differences between Imagination and perception?
3. Analyze relationship between motivational function and imagination.
4. Explain roles of emotion in imagination process.
5. Give examples of Imagination process in human culture.
6. How imagination relates with memory?
7. Analyze passive and active Imagination.
8. Define Basic properties and techniques of Imagination.
9. Analyze Theories of Imagination.
10. How Imagination influence on human creativity?

CHAPTER 8. THINKING AND LANGUAGE

8.1 General Characteristics of Thinking

Definition

The stream of consciousness and all its contents including silent vocalizations, emotions, images, and the perception of the external and internal worlds. The processes, which underlie behavior and all the phenomena of experience. Any product of the mind, such as judgments, attitudes, knowledge, opinions, and beliefs.⁵³

In contrast to sensation and perception that gets information through the senses, thinking is a rational form of knowledge, which is not directly given by perception. The thinking is associated with the speech process of individual. Thinking is human cognitive process, which allows reflecting information by logic operations such as analysis, synthesis, comparison, abstraction, specifying, systematization and generalization.



Figure 8.1.1
Example of analysis

Analysis is cognition of object by breaking of object of phenomena into smaller parts such as sides, elements, properties, in order to understand it. It is division of the knowable object to the various components. The analysis of some object, which are the most important and interesting for individual become a strongest stimuli, causing the active process of excitation in the cerebral cortex.

Synthesis is the process of putting together parts of phenomena or objects in order to get something new or combine these parts in order to form a coherent whole. Analysis and synthesis are always interrelated.

Comparison helps to establish similarities or differences, equality or inequality between objects. Comparison is based on the analysis.

Abstraction is process which gives possibility to define common sides of several objects. Abstracting possible only after the analysis and it is related to scientific theoretical thinking.

Specifying is opposite process, which defines particular, concrete sides of object. *Systematization* is location of objects, events, thoughts in a certain



Figure 8.1.2
Example of synthesis

⁵³ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 543

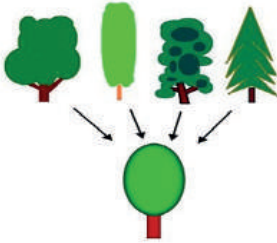


Figure 8.1.3 Example of Generalizing

order. For example, the chemical elements in the Mendeleev’s periodic table.

Generalizing as a component of thinking is allocating the similarities between objects, and applying it more broadly.

The process of thinking and problem solving.

W. James believed that thinking is related to individual’s motivation to solve a new problem situation, where necessary to create a new efficient way of action.

The thinking often begins with an analysis of the problem situation with exact conditions and requirements. Often the finding and formulation of the problem demands even greater mental effort than its subsequent resolution.

Motives and emotions provide search process of problem solution.

Thus, thinking is a process, which mediates and generalizes knowledge, finds relationships between objects and phenomena, and their transformation.

8.2 Main Types of Thinking



Figure 8.2.1 Example of Thinking

Thinking is clearly productive process, which is defined as a search for and discovery of essentially new.

The main common classification is related to following three types of thinking:

- 1) Concrete operatory thought;
- 2) Representational thought;
- 3) Verbal-logical (or conceptual) thinking.

Thinking develops in phylogenesis and ontogenesis in this order types.

Concrete operatory thought based on the direct perception of objects. By physical contact with objects comes comprehension of their properties.

Representational thought (or “sensorimotor intelligence”, according to the classification of Piaget) is earliest and simplest form of the child’s thinking, which is in “captivity” in situations and actions. For example, children often break the toys with the aim to see “what’s inside.” Individual during solving a problem starts to analyse, compare and summarize various images about it.

Verbal-logical (or conceptual) thinking is the next type of thinking that appears in ontogeny. The ontogenetic development of verbal-logical thinking occurs at the age of four to seven years. This type if thinking is

relate to transition to the symbolic level of solving problems. Symbolic level of thinking depends on language and speech. Thought becomes verbal and logical. Verbal and logical thinking is characterized by the use of concepts, logical constructs, operates on the basis of linguistic resources, and different types of generalizations are formed. Basis of verbal-logical thinking is the inner speech.

The second classification of thinking depending on direction of thinking:

- 1) practical and theoretical;
- 2) logical and intuitive;
- 3) autistic and mythological;
- 4) creative.

Practical thinking is related to practice and with solving practical problems. It takes place under time pressure, danger or high responsibility for decision-making. Practical thinking is aimed to transform external conditions.

Theoretical thought is related to explanation of objects and phenomena. The process of thinking involves creating a hypothesis, a new idea or image, as well as hypothesis testing for compliance with reality.

Logical thinking is process of thinking that allows identifying meanings of similar objects by converted inner mental operations. Inner mental operations based on sign systems of language.

Intuitive thinking is a complex unity of the logical and intuitive components that are closely interconnected in thinking. Intuitive thinking acts as generating hypotheses, strategies and solutions challenging task by semantic and logical signs in unusual combinations. By intuitive thinking new knowledge comes through “insight” (enlightenment). Thus, intuitive thinking is the function of producing new knowledge.

Autistic thinking firstly appeared in psychiatry. E. Bleuler described autistic thinking as a type of thinking direct to withdrawal from reality for affective satisfaction in the inner world. Normally some elements of autistic thinking, such as dreams, fantasies or mental accommodation imaginary can be considered as necessary exercise for human psyche. In modern psychology, problem of autistic thinking is connected with issues of computer influence on the human psyche. For example, internet addiction is one of such issue. However, modern researchers note that computerization can stimulate the creative imagination; develop of cognitive abilities and self-actualization.

Creative thinking has number of qualities such as:

- 1) Free from stereotype usual patterns of knowledge in order to search new approaches in solution of creative tasks;
- 2) Critical thinking as an ability to assess objectively the product of human mental activity;
- 3) Depth of thinking;

4) Latitude (or erudition) as possibility to use knowledge from various fields in order to solve the problem;

5) Independent thinking is ability to formulate any problem originally and solve it, without succumbing to outside influence;

6) Openness of thinking which allows getting new information without neglecting its sources for some subjective reasons;

7) Empathy of thinking is an ability to identify with other individual in order to understand his thoughts. Such kind of quality required for various types of mental competition from the intellectual games to crime detection;

8) Anticipation is an ability to predict the evolution of the situation, to anticipate the results of its activities.

Definition

***Creative thinking* is a way of looking at problems or situations from a fresh perspective that suggests unorthodox solutions (which may look unsettling at first). Creative thinking can be stimulated both by an unstructured process such as brainstorming, and by a structured process such as lateral thinking⁵⁴.**

The creative thinking has four stages:

1) This stage helps formulating a problem, gathering information and verification of possible solutions of a problem.



Figure 8.2.2 Example of creative thinking

2) Second stage is related to reflection problems by brain. This stage is characterized by unconscious level of processing relevant information. This step may take different amounts of time for example, from several hours to several weeks. During this stage often appears sudden insight, which can occur in the most unexpected moment while walking, conversation, perform any daily activities.

3) Stage of insight is related to intellectual activity, where the maximum concentration exist. After sufficiently rested brain is “loaded” processed information at an unconscious level.

4) Stage of solutions fully conscious during verifying in practical actions.

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<http://www.businessdictionary.com/definition/creative-thinking.html>

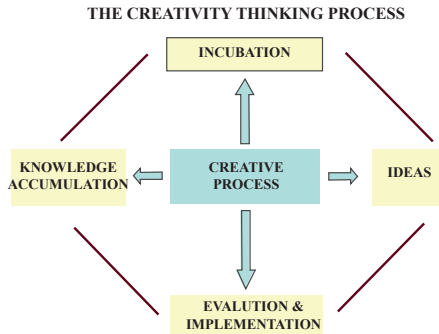


Figure 8.2.3 The creative thinking process⁵⁵

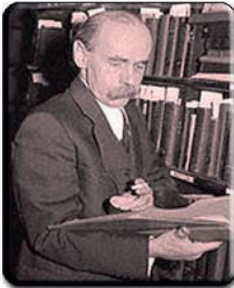
Creative thinking



A. Brushlinskii (1977) said that thinking is always search for and discover of essentially new. One of the first researchers of the creative thinking was a psychologist M. Wertheimer. According to M. Wertheimer, process of problem solving is not a result of a simple mechanical repetition and remembering. It connects with creative thinking by two factors: adaptability and structural feature of creative thinking.

Adaptability means that the creative processes aimed to improving the situation;

Structural feature of creative thinking allow changing elements of a situation within the whole structure.



By M. Wertheimer in order to stimulate creative thinking, it is necessary to perform atypical, unusual tasks. Individual who decides to solve a problem must look at the situation in a new way, trying to use the hidden properties of objects and their unusual connection.

Wertheimer created a collective image of the creative process, which consists of five stages:

- 1) Emergence of a problem, which mobilizes individual creative recourse;
- 2) Perception and analysis of a situation, awareness about problem.

⁵⁵

At this stage, formed a complete image of the problem situation for future development of solutions;

3) Implementation of decisions often difficult. Dealing with problem occurs on unconscious level by inspection and rejection of hypotheses;

4) Emergence of new idea (principle plan) of solutions. The nature of this process is mysterious and incomprehensible to individual. This gives rise to the mystical concept of creativity;



5) The executive, “technical” stage, when a decision become concrete, is being finalized, tested and related to socially accepted requirements.

According American psychologist Graham Wallace (1926) creative thinking takes place in four stages: preparation, maturing, illumination and verification.

This view of human creative thinking has generated the possibility of diagnosing and testing the ability to be creative. J. Guilford, E. Torrance, J.A. Ponomarev,

R. Stenberg and other psychologists experimentally studied creative thinking.

Modern researchers distinguish three phases of the creative process:

1-stage: Ability to generate ideas. The criterion appears in the quantity and quality of the ideas;

2-stage: Ability to analyse and refine the ideas already put forward. Man must find ways to enhance the positive effects and minimize the negative;

3-stage: Ability to compare possible alternative ideas in terms of their practical value. It is necessary to rank available factors in order of importance.

Each individual can learn to think creatively. To do this, it is necessary to develop the relevant skills, overcome internal barriers to creativity etc.

8.3 Forms of Thinking

There are three logical forms of thinking: concept, judgment, inference.

Concept is a reflection about distinctive features of objects and phenomena, their general and specific features expressed by a word or group of words.

Every concept is a generalization of a particular class of objects. The content of the concept is not reflected in detail-specific, but significant, abstract properties of objects and phenomena that are inaccessible to direct sensory observation.

The concept represents the highest verbal and logical level of generalization of thinking. Concepts are concrete and abstract. Specific concepts reflect objects, phenomena and events, reflect abstract ideas. For example, “man”, “autumn”, “holiday” is specific concepts; “truth”, “beauty”, “good” are abstract concepts.

The concept, as part of the logical form of thinking is closely linked with the other two forms: judgments and inferences. The content of the concepts is revealed in the judgments, which always have a verbal form.

Judgment is a reflection of the relationships between objects and phenomena of reality, or between their properties and attributes. For example, when we think that metals expand when heated, we thus establish a link between changes in temperature and volume of the metal. Judgments are shared, private and isolated. Judgments may be formed in two ways. The first is a direct expression of the perceived relationship of concepts. Second is using reasoning as a degree of indirectly judgment.


Thus, the conclusion is a new judgment removal of two (or more) existing judgments (premises).

Thus, for productive mental activity it is necessary logical forms of thinking. They are determined by the credibility, consistency, and therefore the adequacy of thinking. The concept of logical forms of thinking turned into the psychology of formal logic. This science also studies the process of thinking.

8.4 Theories of Thinking

1. Thinking in associationism. The basis of this direction in psychology is association's principle. Laws of associations were investigated by D. Hartley, J. Priestley, J.S. Mill, etc. They had identified four types of associations:

- 1) Similarity;
- 2) Contrast;
- 3) Near in time or in space;
- 4) In relation (causality, inherence).

 **Mental associations are the building blocks of all or almost all mental processes, with the most complex built up of numerous simpler associations⁵⁶.**

The basic law of association has been formulated as follows. If association stronger and more true, the more often it is repeated. Development of thinking was seen as a process of accumulation and strengthening of associations.


2. Würzburg school. This trend in psychology as opposed to associationism, considered thinking as internal action. O. Külpe, S. Ach, K. Marbe and other said that thinking has its specific content, cannot be reduced only to the visual-figurative. Würzburg School also belongs to the assertion that thinking is action-oriented.

⁵⁶ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P.56

Representatives of the Würzburg School began the first experimental studies of cognitive processes. However, their experiments are limited only by systematic introspection of thinking processes during performing tasks which are requiring mental actions. This could be the task of interpretation of complex texts, identifying between objects relations, establishment of cause-and-effect relationships, and so on. Later, S. Ach made first attempt to create an objective method of research of thinking. He created a methodology for the formation of artificial concepts.

Despite the great contribution of the Würzburg School its position was self-contradictory. Representatives of this school worked in a purely idealistic terms.

3. Gestalt Psychology. The main idea of Gestalt psychology is as follows: the contents of any mental processes are not separate elements, but have holistic configuration so-called Gestalt.

 **Gestalt is a perceptual whole that is more than the sum of its parts and cannot be completely described in terms of its parts.**

Basic principle of Gestalt psychology is perception of “figure” and “background”. General idea about thinking is related to the concept of structure in Gestalt psychology. The structure is ultimately the only mechanism of thinking, its form and content. The structure was nominated by Gestalt psychology as the central law opposed to the law of association. The representatives of Gestalt psychology are M. Wertheimer, W. Keller, K. Koffka, K. Dunker and others have launched a new approach to thinking, considering it as an act of restructuring situations. The primary content of any mental process is holistic education-configuration or “gestalt”. Thinking seen as sudden, unprepared analysis, aimed to release essential features of the problem situation activities.

As noted by M. Wertheimer, K. Dunker, solution of the problem lies in the fact that some elements of a problem situation are beginning to be seen in a new gestalt, in a new relationship. The process of solving a problem situation is directed to the discovery of new properties in object that exists in a certain system of relations with other elements of the problem. The solution comes as a gestalt.

For example, K. Koffka, as one of the representatives of Gestalt psychology believed that thinking is a transformation of problem situation’s structure, because its elements reveal new features and relationships.

4. Behaviorism. J. Watson believed that the object of psychology could be only a behavior. He introduced the concept of behavior as a relation between

stimulus and response. According to J. Watson thinking relates with next factors. Thinking includes all kinds of inner speech activity, and any non-verbal forms of expression, such as gestures and facial expressions. According J. Watson idea there are three main forms of thinking:

- 1) easy deployment of speech skills (play verses or quotes without changing the order of words);
- 2) the tasks are not new, but rare, so that they would require a test of verbal behavior (trying to remember the half-forgotten verses);
- 3) new challenges requiring a verbal decision before will be taken any action openly expressed.

5. The psychoanalytic concept. Within the framework of psychoanalysis, thinking is seen as primarily motivated process. These motives are unconscious in nature, and the area of their display is dreams, reservations, and disease symptoms. Dreams are considered as a kind of involuntary figurative thinking. Analysis method of free association allowed studying some features of mental activity.

6. The concept of thinking of J. Piaget. J. Piaget regards thinking as a biological process. He used the concept of “intelligence” as a concept of critical thinking.



Figure 8.4
J. Piaget with his family

Likewise, Jean Piaget’s influential theorizing about child development was based initially on the study of just three children – his own (Figure 8.4). Piaget and his followers then went on to test his claims with larger groups of children.

J. Piaget considered that intelligence is a set of biological characteristics that are fundamental to the human psyche. Basic functions of intelligence are organization and adaptation. Under the organization of intelligence means it’s structuring. Intellectual activity highlights a single whole. Adaptation also involves two interrelated processes: assimilation and accommodation⁵⁷.

⁵⁷ Gleitman H., Gross J., Reisberg D. Psychology. – 8th ed. ISBN 978-0-393-93250-8. – New York, London, 2011. – 850 p. P.553

Assimilation refers to the tendency to interpret a new experience in a manner that is consistent with one's preexisting concepts and knowledge. Accommodation is term used by Jean Piaget to explain one way in which we confront new information⁵⁸.

Accommodation occurs when we are faced with new information that we cannot incorporate in our existing knowledge or schemes. Thus, we must alter our existing knowledge to integrate this new information. Accommodation is a process that works in conjunction with the process of assimilation.⁵⁹

On the basis of this conclusion, J. Piaget developed the doctrine of development stages of intelligence:

I – sensor-imotor intelligence (from 0 to 2 years).

II – preoperational thinking (from 2 to 11 years).

III – the period of concrete operations (from 7-8 to 11-12 years).

IV – the period of formal operations.

Consider the six basic stages in sensorimotor intelligence development.

The first phase (first month of life) is characterized by the prevalence of reflexes.

In the second stage (from one to four months), child get first simple skills of assimilation of one object in different schemes. For example, he tries to look at what he caught, and seeks to grasp everything.

In the third phase (approximately four to eight months), the child begins more actively explore the objects of the external world. Faced with an unfamiliar subject, he explores it using the familiar scheme: hitting, scratching, and shaking. It appears as “motor identification” items.

The fourth stage (10-12 months) is related to anticipation of the event as affectively charged experience. For example, child begins cry when an adult decides to leave him alone.

For the fifth stage (about 12-18 months) child starts active experimentation in order to achieve any goal.

In the sixth stage (18-24 months) the child becomes capable to get “insight” as discovery of new means suddenly, without experimentation.

6. Cognitive Psychology. In cognitive psychology, thinking is related with a process of information processing. This idea was developed by computer

⁵⁸ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P.54

⁵⁹ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P.8

technology. Cybernetics introduced a concept of artificial intelligence. Cybernetics began to develop a comprehensive, multidisciplinary approach to the problem of intelligence at all. This had a great impact on the psychological science. In this case, all mental processes start to analyse as analogous of computing processes. In addition, the interpretation of thought as the information processing system has a number of limitations. There was no distinction between data-processing and human thinking as psychological systems which are related to goal formation, conscious and unconscious processes in mental activity etc.

7. *Domestic psychology* based on idea that thinking is a form of activity. Activity as methodological principle reflects the determination of the thought processes by needs, motives, values of individual, etc. As part of the activity approach also are agreed about unity of thinking in his phylogenetic and ontogenetic aspects.

8.5 Language and Thinking.

For human being thinking is not only one essential basis. Language and speech are other significantly important cognitive processes, which directly relate with thinking. This reflects one of the fundamental distinct between the human psyche and the psyche of animals. Animal's elementary thinking is mediated by visual information. Their thinking cannot be abstract. Such primitive thinking operates with objects in visual-motor plan and does not go beyond it. Only with the advent of speech, it is possible to convert knowledge about object to concept explained by words.

The human psyche does not exist without language.



Language is the implicit system that links an external linguistic signal, acoustic or written, and the message carried by that signal. Central to knowledge of language is linguistic competence, knowledge of the principles for combining sounds (phonology), morphemes (morphology), and words (syntax); the principles for determining meaning (semantics); and the vocabulary repository (the lexicon)⁶⁰.

Language as a system of signs plays role of a tool of human communication and thought. Mastering the language leads to the development of speech and mental activity, opening the possibility to understand, comprehend and use the knowledge gained from other people and culture components.

⁶⁰ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P.277

By language human acquires means in order to analyse environmental information. Language as a social phenomenon is a prerequisite for the emergence and development of speech as a psychological phenomenon. Language is a complicated structured cognitive process, which includes word pronunciation, control speech, interprets of auditory code etc.

We have seen that the forms and contents of language are very much bound up with the organization of the human brain and with the ways that humans think and perceive the world. Languages are alike insofar as they are the central means for transmitting beliefs, desires, and ideas from one human to another. To accomplish these human communicative goals, each language must have phonemes, morphemes, phrases, and sentences, and tens of thousands of different meaningful words. But within these bounds, languages also differ from one another in various ways. And these differences are not only with the sounds of the words- hat the word meaning “dog” is pronounced dog, chien, perro, and so on in different communities. Some languages will simply lack a word that another language has, or refer to the same thing in quite different ways. As one example, we speak of a certain tool as a screwdriver, literally alluding to the fact that it is used to push screws in; German uses the term Schraubenzieher, which translates as “a screw puller”; and French uses the word tournevis (“screw turner”) for the same tool, thus referring to both the tool’s pushing and pulling functions (Kay, 1996). As we have also mentioned, sometimes the structures differ across languages too, as with fixed word-order languages like English and Mandarin Chinese versus those with a quite free word order such as Finnish and Russian. Further differences are at the social level. For example, such languages as Italian and French have different pronouns for use when referring to relative strangers (e.g., French vous, or to intimates tu). Finally, languages differ in the idioms and metaphors with which they characteristically refer to the world. Witness English, where your new car can be a lemon even though it is inedible, your former friend can be a snake in the grass, and your future visit to an under-ground cave can be up in the air until its date is settled.

Do these differences matter? Certainly we would not think that Germans and Americans use different tools for inserting and extracting screws and that only the French have a single tool for both jobs. At the other extreme, having a linguistically built-in way to refer differentially to dear friends and total strangers just might.

How Language Connects to Thought?

In one sense it is totally obvious that language influences thought. Otherwise we would not use it at all. When one person yells “FIRE!” in a crowded room, all of those who hear him rapidly walk, run, or otherwise proceed to the nearest exit. In this case, language influenced the listeners to think, there’s a fire; fire

is dangerous; I'd better get out of here FAST. Language use also influences our thought in other ways. It is a convenient way of coding, or chunking, information, with important consequences for memory. The way information is framed when we talk or write can also influence our decisions, so that a patient is more likely to choose a medical treatment if she is told it has a 50% chance of success than if she is told it has a 50% chance of failure.

In all these examples, the choice of words and sentences affects our thinking. Of course, language is not the only way to influence thought and action. Observing the flames is at least as powerful a motivator to flee as is hearing the cry FIRE! Still, language is an enormously effective conveyer of information, emotions, and attitudes. This much ought to be obvious. Why would we ever listen to a lecture or read a poem or a newspaper if we did not believe that language was a means of getting useful or aesthetically pleasing information? But when we speak of language differences influencing thought, it is in quite a different sense from this. In this latter case, we are asking whether the very forms and contents that a language can express change the nature of perception and cognition for its speakers.

8.6 Types and Functions of Speech



Definition

Speech is the vocalized form of communication based upon the syntactic combination of lexicals and names that are drawn from very large vocabularies. Each spoken word is created out of the phonetic combination of a limited set of vowel and consonant speech sound units (phonemes). These vocabularies, the syntax which structures them and their sets of speech sound units differ, creating many thousands of different, and mutually unintelligible, human languages. Most human speakers are able to communicate in two or more of them, hence being polyglots⁶¹.

There are different types of speech: speech gestures and audible speech, written and oral speech, external and internal speech. The basic division of speech is internal and external one. External speech is divided into written and oral forms. Oral speech includes a speech monologue and dialogue.

Inner speech is soundless speech, which flows more like a thought process. There are two varieties of it: the actual inner speech and pronunciation in

⁶¹ <http://www.cognopedia.com/wiki/Speech>

the psyche. Pronunciation is just mental repetition of any text in case where repetition is impossible in loud condition (for example, the forthcoming report of the text, learn by heart a poem).



The concept of inner speech by L.S. Vygotsky

L.S. Vygotsky played significant role in development of psychological concept of verbal meaning and thinking process. In his book “Thought and Speech” (1934) was explained main concept of inner speech. Inner speech is a phenomenon qualitatively different from external speech, which is aimed primarily at the processing and preparation of the perceived speech utterances. Inner speech comes from the egocentric speech or “speech for own self”. L.S. Vygotsky found that children’s egocentric speech is bearer of the processes unfolding child’s thinking. At this time, child’s thinking just entering as a path of internalization.



***Internalization* is the process of taking ideas, behavior patterns, beliefs, and attitudes of other people and making them part of the self. In object-relations theory, the process of taking an object relationship into the mind which reproduces the external relationship as an internal process of mind⁶².**

L.S. Vygotsky argued that egocentric speech is not just the sound accompaniment of internal thought process. Egocentric thinking is the only form of existence of thought in child psyche. Only after passing the stage of egocentric speech, the thinking in the course of further change and internalization will gradually turn into a mental process, transforming it into the interior.



The main feature of inner speech is revealed in the course of further study this phenomenon.

The main features of inner speech are:

- Fragmentation;
- Predicates as relation between subject and words;

⁶² The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 262

- Reducing the phonetic points (phonetic aspect of speech is reduced, the words are understood by the intention of the speaker to pronounce them);
- The predominance of meaning of a word.

Sense of the word is more dynamic wide than their values.

Thus, communication as external aspect of speech is developing in childhood period from one word to the clutch of two or three words, and then to a simple phrase and phrases adhesion, even later connected to a speech consisting of the expanded number of proposals.

Semantic speech develops in the opposite direction. Child begins from whole sentence and then moves on to the mastery of individual semantic units.

External speech is spoken and written. Speaking is first of all sound. But it is impossible to exclude the value of gestures. They can be accompanied by sound and speech, and act as independent characters. Some gestures can be the equivalent of words and sometimes even pass quite complex meanings in an environment where the sound cannot be applied. Communication by means of gestures and facial expressions refers to the type of non-verbal communication, in contrast to verbal one.

Speaking has two forms. A more common form is dialogic one. Dialogue is a direct communication between two or more persons in order to exchange information.

Monologues are another manifestation of speech. There is relatively long consistent presentation of a certain system of thoughts, knowledge. For example, individual can give lectures to a large audience.

Written language is very limited in the means of expression.

Traditionally, there are three functions of speech:

1. Nominative. This function of “naming” objects which surrounding individual. This communication between people is far different from animals’ communication. Animals’ communication takes place at the level of the sound or other signals that act directly on the reflexes.

2. Distributions. This function involves in separation of essential features of objects and combining them into logic groups. Each word names this group of objects, which are common for society. This function is related directly to thinking.

3. Communicative function provides transfer of knowledge, attitudes, and feelings in interaction between people. This function serves primarily as an external verbal behavior.

Voluntary aspect of communicative function is related with individual ability of using the speech activity in order to influence others’ opinion, attitude. Such people are named as persons with charisma.



Figure 8.3 Model of language and speech interaction⁶³

Intellectual function of speech defines a method for forming, formulation and understanding of thoughts. This means that there are very complex relationships and transitions between speech and thinking.

Problem of speech is a branch of psycholinguistics.

8.7 Applied Aspects of the Using Speech

Applied Psycholinguistics is approach of practical side of speech development. It deals with issues related to the functioning of the speech in the practical life of people, studying speech communication in personality and his professional activity. Field of applied psycholinguistics is wide enough. This is due to fact that it is woven into the whole human activity, social and personal contacts. The need for such kind of scientific psychological knowledge is observed in many practical situations. For example, in professional work solving problems is possible only by using speech. Speech also provides an effective influence on people. Practical rhetoric refers to this area.

Practical rhetoric. Since ancient times, people were interested in the problems of the impact of speech. Nowadays, the interest in this area is not reduced. In many countries, there are institutions for education and maintaining a culture of communication and speech communication. College students are trained to develop skills of correct speech, and the ability to communicate with people of different status, age, position. It is believed that the possession of correct speech a prerequisite for success in any field of activity. In Japan developed and practiced school courses in speaking, listening, reading and writing. In our country also there are various trainings and courses to develop skills in public speaking, business negotiation, conflict resolution, public speaking skills courses.

⁶³ <https://image.slidesharecdn.com/class2-150823112013-lva1-app6892/95/class-2-3-638.jpg?cb=1440328894>

Modern rhetoric deals with the analysis of various aspects of verbal communication. People consider the different situations of communication: direct (when speaking “face to face”) or indirect (when speaking on television or radio). It reveals how people act in communion with each other in order to satisfy own needs.

8.8 Violations of the Speech Function

Voice disorders can happen at any point in the speech mechanism: the pronunciation, semantic perspective. Lighter defects occur in the form of imperfection pronouncing certain sounds or their combinations. Violations of the semantic level of speech typically occur as a result of damage the brain speech zones, which can occur due to injuries.

The resulting partial or complete loss of speech is called aphasia. There it’s various forms:


- Motor is related to difficulty pronouncing words;
- Touch. Individual does not understand the spoken word or written word;
- Syntax. Individual does not understand;
- Amnesic. Individual has difficulty in naming objects, etc.

Differential diagnosis of aphasia requires consistent identification of the factors that cause the disease. In sensory aphasia is the leading state of phonemic hearing. Motor aphasia requires the identification of the state of the articulatory apparatus. Such diagnosis is the prerogative of experts in neuropsychology.

8.9 Intelligence and Thinking

Thinking and intelligence are similar in content terms. We say “an intelligent man”, indicating that the individual characteristics of intelligence. Intelligence is ability of thinking and thinking is the process of realization of intelligence.

Thinking and intelligence has long been considered an important feature of human being. It is because human intelligence has taken a dominant position in the world and has received additional funding for biological survival.

 ***Intelligence is a set of abilities to adapt better to the environment through experience*⁶⁴.**

⁶⁴ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P.259

Intelligence makes possible to engage in activity successfully. It was revealed that a very high level of intelligence (in excess of 155 points on IQ tests) negatively correlates with children's adaptation. They are ahead of their peers in intellectual development for more than four years and become strangers in their own teams.

The study of individual differences of intelligence began in the XIX century. F. Galton became interested in the problem of the heritability of genius. In 1911 came the first test to evaluate the mental development of children, created by the French A. Binet and T. Simon. Since XIX century, psychologists developed a variety of intelligence tests.

With the advent of tests there was opened the possibility of certain facts and measurements of intellectual abilities. IQ tests are usually a set of relatively simple tasks with a single correct answer.

Spearman identified three intermediate intelligence factors, which are involved in decision of wide classes of problems: numerical, spatial and verbal.

Spearman proved that the role of the factor G is greatest in solving mathematical problems and problems in the conceptual thinking. For sensorimotor tasks common, factor decreases with increasing role of special influence factors.

Spearman's main opponent was another American scholar, L. Thurstone, who denied the existence of factor G. According to L. Thurstone, there are independent abilities that determine the success of intellectual activity: verbal comprehension, verbal fluency, numerical factor, space factor, associative memory, perceptual speed, inductive factor.

J. Guilford believed that our abilities are determined by three main categories: operations, maintenance and products. Among the categories allocated J. Guilford, one aroused the greatest interest among researchers. This is a concept of "divergent" thinking which means that thinking is related to searching different directions of possible solutions rather than one correct answer. For example, in one of divergent thinking tests participants were asked to list all the possible ways to use bricks. If the test says that brick you can build a house, barn, garage, school, fire, mall, we can assume that he has a high response fluency (number of different proposals), but low flexibility (all answers of the same type). The subject, who has high flexibility, can list other following options: lock the door, load the paper, make a red powder, placed under the wheel of a car, etc.

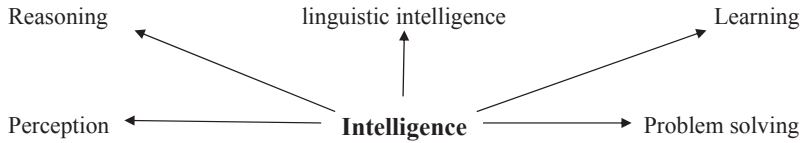


Figure 8.9.1 Link of intelligence with other processes

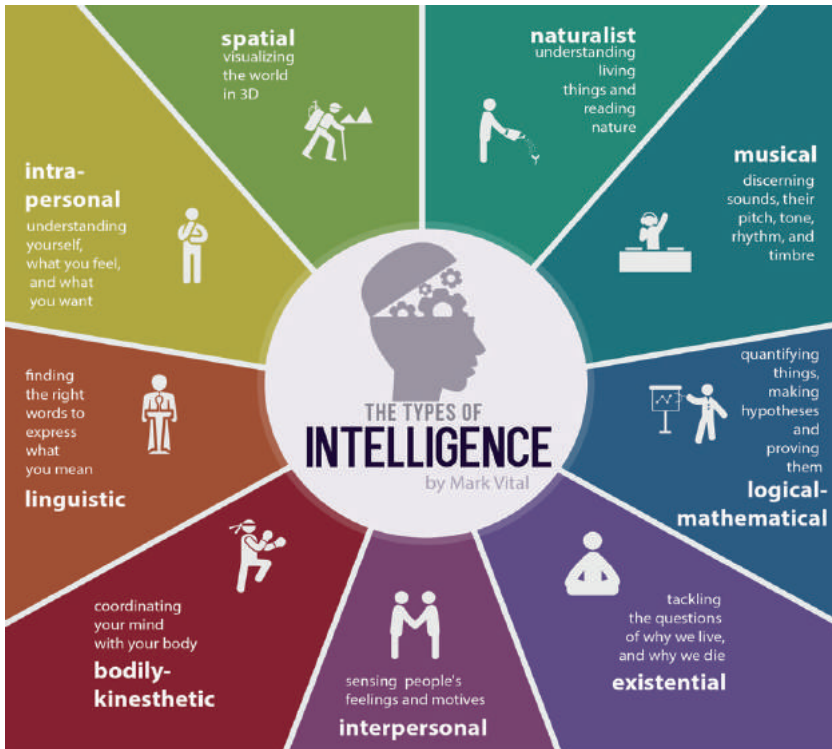


Figure 8.9.2 Types of Intelligence according to H. Gardner⁶⁵

Intelligence is related to reasoning, linguistic intelligence, learning, perception, problem solving.

⁶⁵ <http://fundersandfounders.com/9-types-of-intelligence/>

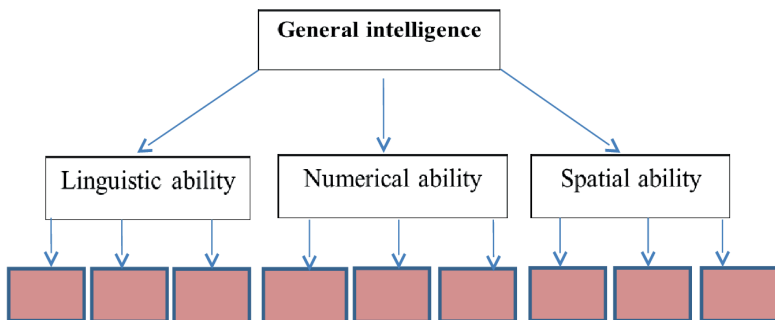


Figure 8.9.3 Intelligence: hierarchical conception⁶⁶

“Hierarchical conception of intelligence According to many modern theories, intelligence has many components. At the highest level is g, a form of intelligence that applies to virtually any mental task. Each person also has a number of more specialized talents – so that performance on a verbal task depends both on g and on linguistic ability; performance on a mathematical task depends both on g and on numerical ability. Finally, each person also has a much larger number of even more specialized abilities – and so performance on a particular verbal task is also influenced by skills directly applicable to just that task; performance on a particular mechanical task is also influenced by skills applicable to just that sort of task, and so on”⁶⁷.

8.10 The Problem of Artificial Intelligence

Artificial intelligence (AI) is a modern area of scientific research in Psychology.

Definition → *Artificial intelligence (AI)* a subdiscipline in cognitive psychology, computer science, psycholinguistics, and philosophy that attempts to simulate human intelligence and to consider the nature of intelligence. Intelligent programming either models behavior as in robotics and expert systems or attempts to model learning so that the computer alters its own programming to work better⁶⁸.

⁶⁶ Gleitman H., Gross J., Reisberg D. Psychology. – 8th ed. ISBN 978-0-393-93250-8. – New York, London, 2011. – 451 p.

⁶⁷ Gleitman H., Gross J., Reisberg D. Psychology. – 8th ed. ISBN 978-0-393-93250-8. – New York, London, 2011. – 451 p.

⁶⁸ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P.52

Artificial Intelligence studies the possibility of providing human ability to think in computer systems and other artificial devices. In the 1940s and 1950s, a number of researchers explored the connection between neurology, information theory, and cybernetics. Some of them built machines that used electronic networks to exhibit rudimentary intelligence.

Thus, one of the classifications identifies two approaches to the development of AI:

Semiotic approach creates high-level models of mental processes in machines such as thinking, reasoning, speech, emotions, creativity, etc.;

Biological approach relates with neural networks and models of intellectual behavior.

In addition, AI is included in the complex of computer sciences, and information technologies. On this way, the following main difficulties arise:

A. Problem solving algorithm is not known in most cases until results will be obtained.

B. Artificial devices (for example, computers) do not have sufficient level of initial competence. Human achieves the result by using his own competence, knowledge and experience in order to create computer.

This means that artificial intelligence is an experimental science.

Control questions:

1. Why Thinking is human cognitive process?
2. Compare the process of thinking and problem solving.
3. Analyse roles of thinking in human activity.
4. How thoughts relate with language?
5. Give examples for relationship between speech and thinking process.
6. Analyse Logical and Intuitive thinking.
7. Analyse main differences between language and speech.
8. How many stages creative thinking has?
9. Analyse Forms of Thinking and their existence in human performance.
10. Explain how Thinking interacts with Speech.

CHAPTER 9. REGULATORY PROCESSES OF PSYCHE

9.1 Concept of “Emotion” in Psychology

Emotions (from the Latin “emoveo” – “stunning, excitement”) are special class of mental processes that reflect the importance of individual’s activity. Emotions contribute to behavior by arising due to response on significant life events.⁶⁹

Definition → **Emotions (translated as worry, shock) is a psychological process of subjective reflection of the most General man’s relationship to objects and phenomena of reality, to others, to yourself concerning the satisfaction or dissatisfaction of their needs, goals and intentions⁷⁰.**

Emotion – transient, neurophysiological response to a stimulus that excites a coordinated system of bodily and mental responses that inform us about our relationship to the stimulus and prepare us to deal with it in some way.

Let us recall the myth of the charioteer, proposed by Plato. Psyche and Feelings presented in this myth as two bitter rivals which are able to move in one direction only under the whip of the driver “Will”. Stoics and Epicureans urged to refrain from emotion. Nowadays, this view of emotion is preserved, for example in practice of law. The courts take into account the emotional state of the accused at the time of commission of the offense, meaning “strong emotion” or affect lead to loss of control over their actions.

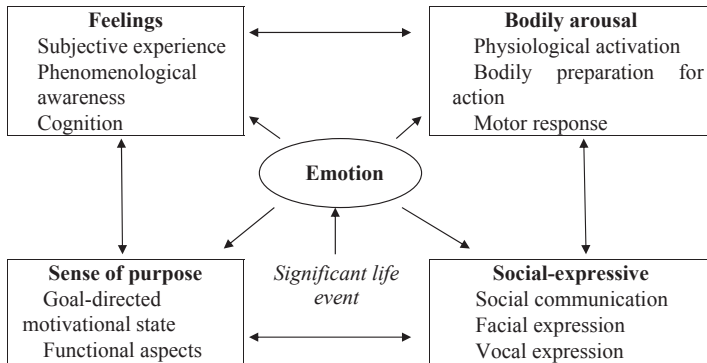


Figure 9.1.1 Four components of emotion

⁶⁹ <https://quizlet.com/37592384/cross-cultural-chapter-8-culture-and-emotion-flash-cards/>

⁷⁰ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 179

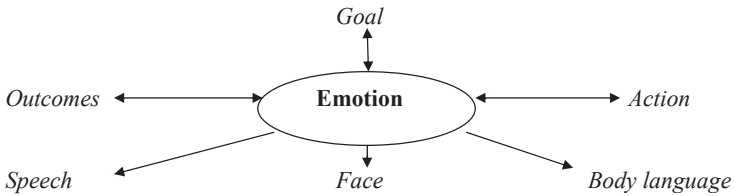


Figure 9.1.2 Relation between Emotion and other parts of cognition and activity

Ch. Darwin spoke about the biological necessity of emotions. Emotions are significantly necessary for survival. There are psychological functions of emotions that support this statement. *Functions of emotion:*

1. *The function of organizing.* Emotions primarily organize activity. Even a biological response such as affect, usually disorganizing human activities but may be useful under certain conditions. For example, when an individual has to be rescued from the serious danger he is relying, by affective reaction, solely on physical strength and endurance.

2. *Mobilizing function.* Mobilizing function of emotions firstly manifested at the physiological level by increasing of adrenaline in blood. This hormone determines ability to escape threatening stimuli due to fear emotion. In addition, the phenomenon of “narrowing of consciousness”, which is observed during intense emotional states, causes the body to concentrate all efforts on overcoming the negative situation.

3. *Evaluation function* puts emotions in order with other processes in cognition. Emotions reflect in the form of direct experience of events’ significance (meaning) in individual. Emotions are one of the main mechanisms of internal regulation of mental activity and behavior aimed meeting current needs. Emotion makes possible to evaluate directly the meaning of the isolated stimulus or situation for individual. Emotional assessment precedes to expand conscious information processing and, therefore “direct” conscious in a certain way. In addition, Evaluation function of emotion is especially useful when we do not have enough information for rational decision-making.

4. *Compensation functions* in situation of information deficit. O. Maurer (1960) said: “Emotions have absolutely extraordinary value in the functioning of living organisms and does not deserve to be contrasted with intelligence. Emotions itself are likely to represent a high order of intelligence”. In other words, emotion is a kind of resource for solving problems. By P.V. Simonov (1972) emotions are mechanism, which compensate the lack of information. P.V. Simonov suggested that the measure of emotions’ level depends on two

factors: 1) the importance of the needs (N) and 2) the difference between the information needed to satisfy it (IS), and available current information (CI). this difference reflects the subjective probability of achieving the goal. In case of $IS < CI$ there is the emergence of negative emotions (fear, anger, anxiety, disgust), and if $IS > CI$ there is the emergence of the positive one (joy, interest etc.). Emergence of positive emotions increases the demand of needs and emergence of negative emotions reduce their intensity. To illustrate the P.V. Simonov's concept it is possible to use the well-known fable "The Fox and the Grapes." Fox's negative emotion of disappointment decreases its desire to reach it.

5. *The function of motivation and support activity.* Emotion is a product of socio-historical development. They are related to the processes of internal regulation of behavior. As a subjective form of expression needs, they precede efforts to meet them, encouraging and directing it. As already mentioned, performance regulation based not only on cognition, but also focusing on the emotions. It is possible to go for a walk, because "oxygen is good for the body," or because "to enjoy a breath of fresh air". And in the second case, you are likely to get pleasure from the boardwalk.

According to S.L. Rubinstein: "emotions are subjective form of existence needs." Today individuals can effectively hide its motivations of Behavior, but emotions demonstrate their true motives for others. During task performance emotion alerting its success or obstacles.

6. *The regulatory function of emotions* discussed in the psychological literature under various names: binding – inhibition (P.K. Anokhin) trial formation (A.N. Leontiev), reinforce (P.V. Simonov). This function indicates the ability of emotions leave traces in individual life experience, fixing it all impacts in memory.

7. *Function of trial formation (A.N. Leontiev).* This function is a logical continuation of the regulatory function (the track itself would be meaningless if it was not possible to use it in the future). Trial formation goes normally ahead of events in order to predict them.

According to P.K. Anokhin, emotions emerged in the evolutionary process as factors supporting adaptive behavior. In this case negative emotion determine future occurrences of errors and on the contrary, positive emotions reinforce acceptable behavior.

8. *Communication Function.* Expressive component of emotion makes them "transparent" to the social environment. The individual emotional experience is much wider than the experience of his personal experiences: it is formed because of emotional empathy that arise in communication with other people. This is perhaps one of the most important functions of emotions because it serves for empathy as a comprehension of emotional state of an-

other person, ability to experience empathy, compassion, share the feelings of another person. The expression of certain emotions, such as pain, causing the awakening of altruistic motivation in others. For example, each mother can distinguish own child's crying and more over can detect exact reasons of it.

9. *Disorganization function.* Intense of emotions can disrupt the efficient of activity. However, affect, as intensive emotion is useful when individual needs to mobilize their physical strength. However, long-term effect of intense emotion causes distress, which, leads to behavioral disorders, psychosomatic diseases such as gastric ulcer, hypertension, heart attack, etc.

9.2 Types of Emotional States

There are several types of emotional states which classification depend on the depth, intensity, duration, and degree of differentiation of it. They are sensual tone, emotions, affect, passion, mood.


1. *A sensual or emotional tone* is the simplest form of emotions, elementary manifestation of organic sensitivity that accompanies some vital influence of environment stimulus. Often such experiences cannot be expressed verbally because of their weak differentiation (for example, individual may say: "I feel something is wrong").

2. *Emotion is mental reflection of experience's* means in connection with individual needs. Emotions arise from the fact that the subject can not or is not able to give an adequate response to unusual or sudden stimulus.

Traditionally considered the division emotions into positive and negative class. However, emotions such as anger, fear, shame, can not be classified as negative. Anger is directly related to adaptive behavior, and even more often with the protection of personal integrity. Fear is also associated with survival and, along with shame, it contributes to the regulation of permits and aggressive assertion of the social order.

There is another popular classification of emotions in relation with activity. They are sthenic (inducing to action causing stress) and asthenic (inhibitory effect, depressing) emotions. Also known classification of emotions by needs: biological, social, and ideal emotions.

3. *Affect* is quickly and rapidly flowing emotional process with explosive nature, which cannot give a subordinate conscious volitional control.

 ***Affect* – transient neurophysiological response to a stimulus that excites a coordinated system of bodily and mental responses including facial expressions that inform us about our relationship to the stimulus and prepare us**

**Definition**

to deal with it in some way. The basic affects are anger, fear, surprise, happiness, disgust, and contempt. The subjective feeling or evaluative component of human experience or thought⁷¹.

Affect is suddenly occurring, dramatically experienced by individual shock, characterized by a change of consciousness, disturbance of volitional control over the actions. During affect dramatically changed the parameters of attention such as disturbed concentration, partial or complete amnesia, etc. Affect has a disruptive effect on the activity, consistency and quality of performance, with chaotic untargeted motor reactions. There are normal and pathological affects. The main symptoms of a pathological passion are change of consciousness (disorientation in time and space), the inadequacy of the intensity of the response, the presence of posteffective amnesia.

4. *Passion* is intense, generalized and prolonged experience, dominating over other individual motives and leads to focusing on the subject of passion. The causes of passion can be different, from bodily impulses to conscious ideological beliefs. Passion can be experienced as something unwanted, intrusive or can be experienced as wanted. Main features of passion are the strength of feeling passion, expressed in the appropriate direction all thoughts of personality, stability, unity of emotional and volitional moments unique combination of activity and passivity.

5. *Mood* is relatively long, stable mental state with moderate or low intensity. The causes of mood are plentiful from being organic (waste tone) to the nuances of relationships with others.

**Definition**

***Mood* an affective state that persists from several minutes to several weeks which directs and colors perception, thought, and behavior⁷².**

Our feelings are obscure and confused. But their obscurity has not deterred psychologists from attempting to sort them out. Some psychologists have identified dimensions of emotional experience, such as pleasant versus unpleasant and mild versus intense. (Terror is more frightening than fear, rage is angrier than angry, ecstasy is happier than happy.) Other psychologists have sought to identify the fundamental emotions – emotions that are biologically, facially, and experientially distinct.

⁷¹ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 19

⁷² The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 314

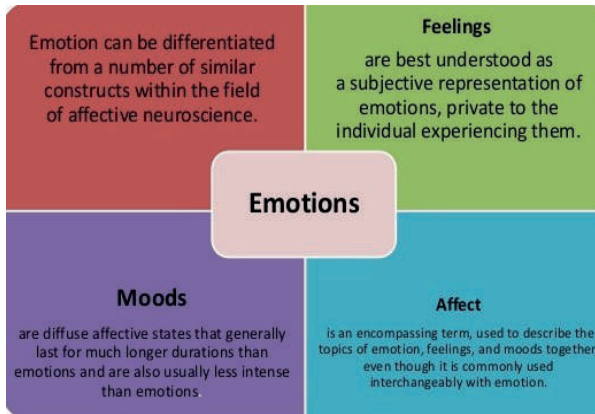


Figure 9.2.1 Classification of emotions

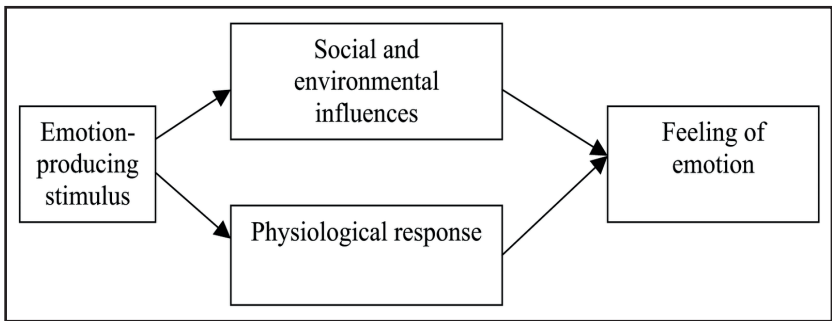


Figure 9.2.2 Feeling and emotions

The variety of manifestations of individual emotional life is determined qualitative differences between emotions and feelings. According to domestic psychology, feelings is a special subclass of emotional processes. Feeling is experienced and is found in specific emotions. However, feeling isolated as the phenomena of reality, having a stable need-motivational significance.

Thus, feelings are stable emotional relationships with environment. Main role of feelings is regulation of behavior.

9.3 Theories of Emotions

Numerous physiological theories of emotions considered that body changes is accompanied by emotional state. Throughout the history of psychological knowledge has repeatedly attempted a link between physiological changes in

the human body and certain emotions. Moreover, complexes of body processes are significantly different in various emotional processes.

In 1872 **Charles Darwin** published his book “Expression of the Emotions among Human and Animals” which was a turning point in the understanding of relationship between biological and psychological phenomena, in particular, between body and emotions. Ch. Darwin showed that the external expression of different emotional states are common among anthropoids’ children. These observations formed the basis for the theory of emotion, called as evolutionary theory of emotions. According to this theory, emotions are vital adaptive mechanisms that promote adaptation to conditions and situations of environment. The bodily changes accompany the various emotional states.

W. James and **K. Lange** has continued Ch. Darwin’s ideas. Their theory became popular in psychology. W. James and K. Lange believed that certain physical conditions are characteristic of different emotions such as curiosity, excitement, fear, anger and anxiety. Appropriate physical changes are called organic manifestations of emotion. In James-Lange theory organic changes in the body cause emotions. Emotions appear by changes in the body which are caused by influence of external stimuli occurrence.

W. Cannon suggested alternative point of view. He firstly noted that bodily changes, which occur in different emotional states, are quite similar. That is why it is impossible to explain qualitative differences between human highest emotional experiences by bodily changes.

W. Cannon-Ph.Bard showed that bodily changes associated with emotional experience that occurs almost simultaneously in order to develop regulation mechanism of behavior.

Later studies found that emotions functionally connected with the brain, exactly with amygdala and the limbic system. In experiments carried out on animals, it was found that the electric influence on these areas develop such emotional states as anger and fear (**H. Delgado**).

Psychophysiological researches of the brain developed Activation theory. According to this theory, emotions restore a balance in relevant structures of the central nervous system.

Activation theory is based on the following key assumptions:

1. Electroencephalographic (EEG) pattern of the brain activity during emotion expression is associated with the activity of the reticular formation;
2. The work of the reticular formation is determined by many dynamic parameters of emotional states: their strength, duration, volatility and others.

Following the theories explaining the relationship of emotional and organic process, there were theories that describe the emotion influence on human behavior and human performance. Emotions regulate human activity but this influence depending on the nature and intensity of emotional experience.

D.O. Hebb calculated curved, “bell-shaped” relationship between emotional arousal and efficiency of human activity. To achieve the best results in activities it is necessary to reach an optimum level of emotional excitability. The optimal level of emotional arousal depends on many factors:

- 1.Characteristics, conditions and other factors of activities
- 2.Individual features.
- 3.Too weak emotional arousal does not provide adequate motivation activity and that why disorganizing it.

Cognitive psychological factors are also important in dynamics of emotional processes and states. One of the first of these theories was the theory of cognitive dissonance of **L. Festinger**. According to this theory positive emotional experience occurs when individual expectations are confirmed and cognitive representations are developed. Negative emotions arise in case of dissonance between expected and actual results of performance. Cognitive dissonance usually is experienced as a discomfort state. In order to avoid the state of cognitive dissonance individual has to change cognitive expectations to conform actual results, or try to get a new result, which would be consistent with previous expectations.

In modern psychology, the theory of cognitive dissonance is often used to explain human behavior, his actions in different social situations. Emotions are also considered as the main motive of relevant actions.

The dominant cognitive approach in modern psychological research believed that cognitive levels direct impact on individuals’ emotional experience.



Author of **cognitive-physiological concept of emotion S. Schechter** also showed that emotional processes make significant contribution to memory processes and motivation sphere of personality. According to this theory emotional state positively is correlated with perceived stimuli, body changes, individual’s past experience and with his current interests and needs. It was discovered that verbal instructions also influence emotions, emotional

states also can be transmitted from person to person.

Domestic physiologist **P.V. Simonov** tried in brief symbolic form to present range of factors that effect appearance and features of emotions.

According to the cognitive formula proposed by P.V. Simonov the strength and the quality of human emotion is ultimately determined by awareness of individual about his ability to meet and solve problem situations.

Connection between emotiona and activity (A.N. Leontiev).

Emotion is a mental representation or a reflection of meanings generated by motive. Emotions are the path to knowledge of the motives:

1. natural meanings are (useful/harmful)
2. social

3. personality is formed by the leading motive (the true/false for personal development at this stage)

Thus there are many emotion theories which have been developing in modern psychology, neuroscience and cognitive science.

Table 9.3 Theories of Emotion

Theory	Explanation of Emotions	Example
James-Lange	Our awareness of our specific bodily response to emotion-arousing stimuli	We observe our heart racing after a threat and then feel afraid.
Cannon-Bard	Bodily response + simultaneous subjective experience	Our heart races as we experience fear.
Schachter-Singer	Two factors: General arousal + a conscious cognitive label	Arousal could be labeled as fear or excitement, depending on context.
Zajonc; LeDoux	Instant, before cognitive appraisal	We automatically react to a sound in the forest before appraising it.
Lazarus	Appraisal ("Is it dangerous or not?")—sometimes without our awareness—defines emotion	The sound is "just the wind."

9.4 Psychology of Stress

Discussing the themes of emotions, it is difficult to ignore the problem of stress. Stress is a common non-specific response of the body to any modality stimulus (stressor).

The term "stress" was entered by Canadian biologist and physician Hans Selye (1907-1982). According to his definition, stress is a general adaptation syndrome to mobilize the body in order to adapt to an environment.

Definition → **Stress – prolonged state of psychological and physiological arousal leading to negative effects on mood, cognitive capacity, immune function, and physical health⁷³.**

According to H. Selye, stress has three stages or phases. On first stage under the influence of a stressor activates the sympathetic nervous system. Man with anxiety may experience emotional state (if the stressor is threaten-

⁷³ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 524

ing) or elation (if the stressor is basically associated with a positive outlook). In the second stage (also called the “stage of fight”) adrenal glands begin to secrete the hormone cortisol in the blood and the body’s mobilization occurs. In the second stage a person can most effectively solve problems that require considerable effort that goes beyond the ordinary. If the effect of the stressor continues, comes the third stage – the stage of exhaustion. If in the third step to mobilize the body exhausted, there will be distress. This leads to significant distress disorders as a mental activity, and physical health.

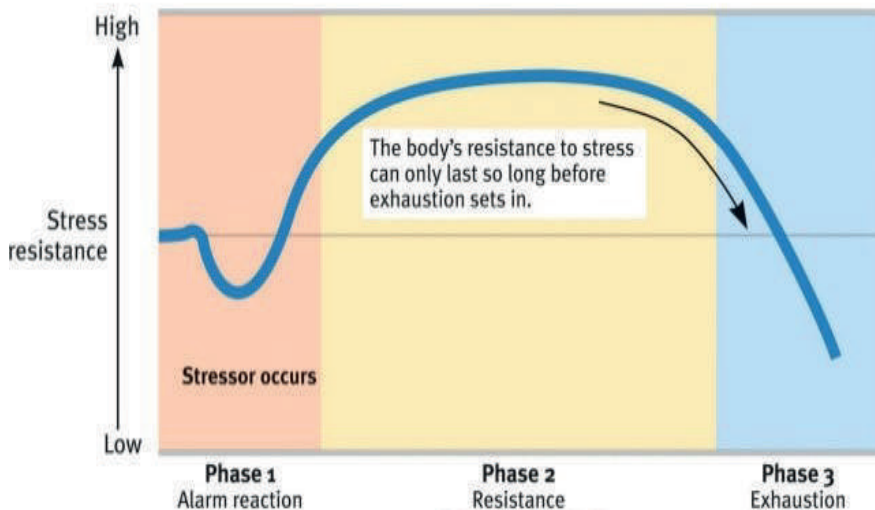


Figure 9.4.1 General Adaptation Syndrome identified by H. Selye⁷⁴

Definition → **Stressor** – any environmental circumstance to which the organism reacts with prolonged physiological arousal⁷⁵.

In ordinary consciousness the concept of stress is uniquely associated with negative feelings. However, positive changes in your life can cause deep stress, rolling in distress. T. Holmes and P. Raе (T. Note, K. Cape, 1967) have developed a list of typical life situations that cause stress. The most stressful was the situation of the spouse’s death (100 points), however, for such is certainly negative situations such as imprisonment (63 points) and injury (53 points), followed by the positive and desirable situations, such as marriage (50 points) or birth of a child (40 points).

⁷⁴ <https://sanescohealth.com/stages-of-general-adaptation-syndrome/>

⁷⁵ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 524

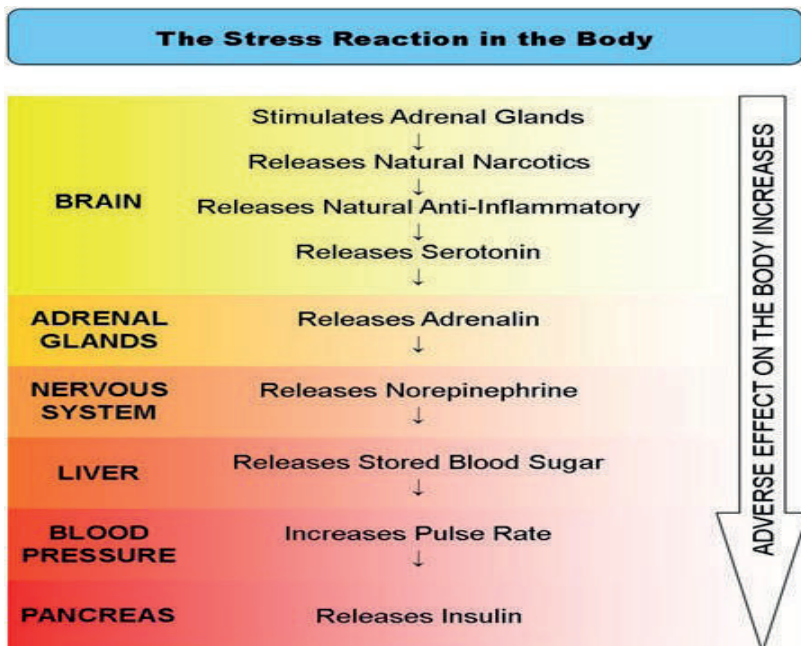


Figure 9.4.2 The stress reaction in the body (by C. Myss, N. Shealy)⁷⁶

The most important factor for successful coping with stress is to ensure that the situation remains under control. In one experiment, two rats simultaneously received painful electric shocks. One of them could not make a difference, while the other, pulling the ring, “controlled” painful effects. In fact, the strength and duration of electric shock were identical for both members experience. However, passive rats developed stomach ulcers and decreased immunity, and kept active resistance to the action of the stressor. Similar results were obtained for the people. For example, employees who have been allowed to organize office space in its sole discretion feel less distress than those who worked for once and for the entire created environment.

L.A. Kitaev-Smyk has allocated two types of changes in the behavior under stress: passive emotional changes that occur in anticipation of the end of the impact of extreme factors (“endure”), and emotional activity, aimed to active removal of extreme factors, overcoming the situation. As can be seen from the above studies, it is the second way gives a more positive evaluation of emotion.

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<http://www.my-holistic-healing.com/psychosomatic-illness.html>



Figure 9.4.3 Stress management techniques⁷⁷

9.5 Will and Volition

Will is one of the most difficult concepts in psychology. It is considered also as a mental process, and as an aspect of most other major mental processes and phenomena. By Will individual control its behavior.

Aristotle was the first among the Greek philosophers who drew problem of the will, who believed that will is human morality. He considered the con-

⁷⁷ <http://www.arikabel.com/tips-you-need-to-know-about-stress-management/>

nection of ethics and human will, making the person responsible for his fate and well-being. “Man is the power of acting. First principle of action, both good and bad is the intention, the will. We voluntarily change our actions. The intention and will, change voluntarily. Hence it is clear that it depends on us to be good or bad (“Great Ethics”). According to Aristotle Voluntary is freedom of choice, and focus on reasonable goals.

With the development of psychology as an independent science widely spread voluntarism as the recognition of the will of a special autonomous force, which underlies the whole mental functioning. According to this position, volitional acts can not be reduced to any mental processes, but they define their course.

So will is the mental function that literally permeates all aspects of human life. Firstly, it sets the order, focus and awareness of human life and activity. S.L. Rubinstein said: “Volitional action is a conscious, purposeful action by which a person performs standing before him the goal, subordinating their impulses to conscious control and changing the surrounding reality in accordance with his plan”.

Secondly, the will as the ability of people to self-determination and self-regulation makes it free from external circumstances. Will brings to life a human being is really a subjective measurement.

Thirdly, the will is a conscious overcoming human difficulties in the way of implementation of the action.

The will, is a particular form of human activity, which involves in initiation, stabilization and inhibition of individual’s desires, motives and organizes the system of actions towards conscious goals. For instance, individual has to consider a situation where he needs to go for a morning jog, while he wants to sleep. Firstly, individual has to choose one of several competing motives (“sleep”, “stand”, “stay at home and do exercises”, “lie in bed and watch TV” and others). Thus detected selective function of will is to make a choice in conflict between motives. Then, if individual decide to force himself to get dressed and go out it will be initiating implement of the will function. People may also while running in the imagination act out certain situations that can happen in this day down in your psyche the plans you have to implement. By the will realized an arbitrary regulation of internal and external actions and mental processes. In addition, individual can find another reason of morning jog, for example to lose weight. This decision will be another new motive and actually running start to play another significant role for him.

Thus, the will is a higher level of individual’s regulation of his motivation, emotion and attention. Volitional processes have three main functions:

1. Initiating or incentive function (directly related to the motivational factors) is to make start an action, behavior, activity, overcoming the objective and subjective obstacles.
2. The stabilizer function is connected with the strong-willed efforts

to maintain activity at the appropriate level in different external and internal interference.

3. Inhibitory function is to brake other, often strong motivations and desires, which inconsistent with the main objectives of the activities at a given point in time.

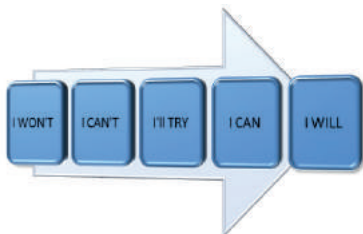


Figure 9.5 Volition spectrum⁷⁸

There are also three main features of the will:

- Awareness by individual about his freedom to act;
- Objective determine of any actions;
- In the voluntary actions individual manifests itself as a whole system with strong-willed regulation.

9.6 Volition and Its Structure

In the problem of the will the most important place takes the concept of an act that has a certain structure and content. The most important links of an act – decision-making and execution – often are of particular emotional states, which are described as a willful effort.

Volitional effort is a form of emotional stress, mobilizing internal human resources (memory, thinking, imagination, etc.), creates additional motivation for action, and experienced as a state of considerable tension.

Components of volition:

- 1) Existence of objective action and its realization;
- 2) Presence of several motives and awareness about importance to find priority motives;
- 3) “Conflict between motives” as a clash in the process of choosing a particular motive in contradictory tendencies, desires and intentions. It becomes stronger if they are equal to each other. Taking “chronic” conflict of motives can generate internal conflict.

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<https://jaykolster.wordpress.com/2012/10/13/the-will-to-choosevolition-spectrum/>

4) Make a decision to choose a particular motive give possibility to solve conflict between motives. At this stage, there is a sense of relief associated with the resolution of the situation;

5) Implementation of the decision in activity or in behavior.

In most cases, decision-making and volitional behavior generally associated with a large internal stress, often acquiring a stress character.

A.N. Leontiev revealed an important component of the will. He believed that during conflict of motives often win social motives, which taking precedence over the biological.

9.7 The Will as an Activity

Domestic psychologist D.N. Uznadze, defined main attribution of the will by three main characteristics:

1) will acts as an objectification of individual behavior. By the will individual can evaluate himself and his motives;

2) the will is always directed to the future;

3) the will is not actual implementation of the human impulse (for example, to get up and drink water). But the will is related with implementation of activity by taking resource for it.

Localization of control

The will depends on type of localization control. Localization of control is related with attribute responsibility for the results of individual's activity.

There are people who tend to explain the reasons of their behavior and their actions by external factors (the fate, circumstances, events, etc.). The tendency to localize control of externalities is associated with such personality traits as irresponsibility, lack of confidence, anxiety.

Internal localization control is related with individual's responsibility to explaining his results of activity by his own abilities, character etc. Internal localization control is consistent with achieving the goal, prone to self-analysis, sociable, independent. Internal or external localization control of volitional action has both positive and negative social consequences.

The power is another psychological features of the will process. A person with a strong will is able to overcome the difficulties encountered on the way to achieving this goal. Weak-willed people succumb to difficulties: do not show determination, perseverance, cannot suppress momentary impulses.

Extreme weakness of will is beyond the norms of the psyche. These include, for example, abulia and apraxia.

Abul based on brain pathology, which creates inability to understand needs, to make a decision to act.

Apraxia also based on brain pathology and it is a complex disturbance of purposeful actions.

Abul and apraxia are relatively rare phenomenon, inherent to people with severe mental disorder.

9.8 Psychological Features of Emotional Intelligence



Definition

Emotional intelligence (EI) was formally defined by Peter Salovey and Jack Mayer in 1990 as a member of an emerging group of mental abilities alongside social and practical intelligence. EI refers to the processes involved in perceiving, using, understanding, and managing emotions to solve emotion-laden problems and to regulate behavior. Perceiving emotion refers to the ability to identify emotions in oneself and others, as well as in other stimuli, including voices, stories, music, and works of art. Using emotion refers to the ability to harness feelings to assist in certain cognitive activities such as problem solving, decision making, creative thinking, and interpersonal communication. Understanding emotions involves knowledge of both emotion-related terms and the manner in which emotions combine, progress, and transition from one to the other. Managing emotions includes the ability to employ strategies that alter feelings, and the assessment of the effectiveness of these regulation strategies. The public and academia were mostly unaware of EI until 1995, when Daniel Goleman, psychologist and science writer for the New York Times, popularized the construct in his book *Emotional Intelligence: Why It Can Matter More Than IQ*. Emotional intelligence quickly captured the attention of the media, general public, educators, and researchers. Goleman, however, made extraordinary and difficult-to-substantiate claims about the importance of EI. The definition of EI in the book was not confined to the abilities described in Salovey and Mayer's original ability model of EI; it now encompassed a broad array of personal attributes, including self-confidence, optimism, and self-motivation, among other desirable personality



Definition

attributes. Research on EI is only in its incipient stages: the theory was published just 15 years ago, and performance measures of the construct have been used in scientific investigations for only about 4 years. The theory of EI will certainly be expanded upon in the coming years, and new tasks to measure different aspects of EI also are under way. There is much to be learned about EI theory and measurement, and its application at home, school, and the workplace. Emotional intelligence (EI) or emotional quotient (EQ) is the capability of individuals to recognize their own, and other people's emotions, to discriminate between different feelings and label them appropriately, to use emotional information to guide thinking and behavior, and to manage and/or adjust emotions to adapt environments or achieve one's goal(s)⁷⁹.

There are three models of EI:

1. The ability model (P. Salovey, J. Mayer) where EI as individual ability is necessary to navigate social; environment.
2. The trait model (K.V. Petrides), EI as disposition of behavior and self perceived ability which can be measured by self-report.
3. The mixed model (D. Goleman) EI is skills, which drive leadership performance.

EI correlate with mental health, job performance, and leadership skills. For example, D. Goleman found that EI positively correlate with leader's superior performance.

EI have been widely developing last few decades. In addition, EI studies carry out with neural mechanisms combination.

Criticisms have centered on whether EI is a real intelligence and whether it has incremental validity over IQ and the Big Five personality traits.

In 1983, H. Gardner said that Theory of Multiple Intelligences relate with only traditional types of intelligence, such as IQ. He introduced the idea of multiple 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).

Also the term «emotional intelligence» was described by Beldoch (1964),

⁷⁹ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 179

Leuner (1966). S. Greenspan (1989). Then EI firstly was study by W. Payne in 1985. The distinction between trait emotional intelligence and ability emotional intelligence was introduced in 2000.

The term became widely known with the publication of Goleman's Emotional Intelligence.

Tests measuring EI have not replaced IQ tests as a standard metric of intelligence. Measurement of EI includes:



Figure 9.8 Measurement of EI (5 metrics)

1. Self-awareness as the ability to know one's emotions, strengths, weaknesses, drives, values and goals and recognize their impact on others while using gut feelings to guide decisions.

2. Self-regulation as involves controlling or redirecting one's disruptive emotions and impulses and adapting to changing circumstances.

3. Social skill as managing relationships to move people in the desired direction.

4. Empathy as considering other people's feelings especially when making decision.

5. Motivation as being driven to achieve for the sake of achievement.

Goleman posits that individuals are born with a general emotional intelligence that determines their potential for learning emotional competencies.

Control questions:

1. Explain main differences between feelings and emotions.
2. How emotional states relate with human activity?
3. Why emotion is mental reflection of experiences?
4. Compare Passion and Mood.
5. Analyze relationship between emotions and other cognitive processes.
6. Explain how emotional intelligence influences on Stress reactions.
7. What does Localization of control mean?
8. Compare Will and Volition.
9. How the Emotional Intelligence helps people to interact?
10. How emotional intelligence correlate with learning process.

CHAPTER 10. PSYCHOLOGY OF PERSONALITY

10.1 Introduction to Personality Psychology

There are different definitions of “Personality”.

Definition by A.N. Leontiev: Personality – a set of social relations that are realized in diverse activities. Personality is relatively late product of social historical development.

Definition by S.L. Rubinstein: Personality – a set of internal conditions through which all external influences are refracted.

Definition by Cohn I.: Personality is understood as a social property of the individual, as a set of integrated socially important traits formed during the direct and indirect interaction of the person with other people and make it, in turn, the subject of knowledge and communication.

Definition by V.A. Hansen: Personality is asocial individual, object and subject of social relations and historical process, manifesting itself in communication, activities, and behavior.

Definition by B.G. Ananiev: Personality is the subject of social behavior and communication.



Personality is the dynamic organization within the individual of common traits, behavior patterns, values, interests, plans and motives, self-understanding and worldview, abilities, and emotional patterns that determine characteristic behavior and thought. All the systems within the individual that develop and interact to create the unique and shared characteristics of the person⁸⁰.

Thus, Personality is the subject of social relations. These relations are realized in activities, which help people to express themselves.



Personality traits are hypothetical constructs. As such, they cannot be measured directly with electrical or mechanical instruments. Instead, the personality psychologist will infer the level of a trait within an individual by observing the effects of the trait on the person’s behavior⁸¹.

⁸⁰ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 371

⁸¹ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 371

The more of a trait that a person possesses, the more trait-relevant behaviors he or she is likely to display. Consider a psychological attribute common to many theories of personality: extroversion. This trait is a hypothetical construct because it cannot be observed directly. Yet it has been proposed to be a veridical construct, having utility in describing and explaining consistencies in people’s behaviors and in predicting future behaviors. Personality traits are generally conceived of as forming normally distributed dimensions. Thus, for any particular trait, such as extroversion, humans are thought to vary along a continuum, ranging from low levels of the trait to high levels, with most people falling somewhere in the middle of the dimension. The task of personality assessment is to identify those people who are, for example, more extroverted and those who are less extroverted.

Another term of “individual” often is replaced by term “personality”. Consider differences between two concepts.

Individual as a species (species of living creatures), which differs from other animals specific characteristics and level of physiological and psychological development, endowed with consciousness, ability to think, speak and make decisions, control behavior, emotions and feelings.

Term “individual” characterizes human as a carrier of specific biological properties. Individual with his psychological-physiological properties is a basis of forming of personality and individuality.

The concept of individual expressed two main features:

1. Individual is specie that represents phylogenetic and ontogenetic development of human beings;
2. Individual as a member of human community goes beyond the natural (biological) limitations by using social tools, signs, and through them mastering their own behavior and mental processes.

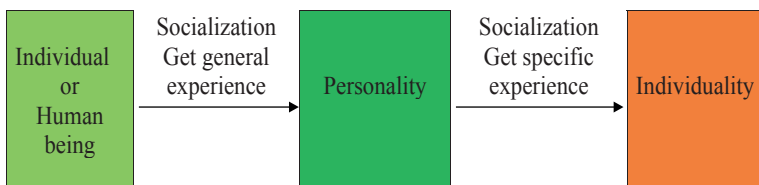


Figure 10.1.1 The main categories of human

Individuality is a collection of individual (biological) and personality (social) properties. Individuality is the individual way of life. Individuality of each person is shown by specifics of intelligence, emotions, will, and other personality traits.

The nature of the individual characteristics is closely related with biological and social identity. Relating with this idea there are different approaches of understanding of human development.

1. *Biogenetic approach* of research of human development. Scientists who belong to this approach believe that leading role of individual development plays biological body's maturation process. Genetics mostly determines a person's personality, even his personality. Sheldon's constitutional psychology is an example of biogenetic approach.



Sheldon's constitutional psychology. The psychology of William H. Sheldon, who suggested that there were three basic breeds of humans called somatotypes in which body form and character are interrelated. The three somatotypes are endomorph, mesomorph, and ectomorph. Sheldon suggested these come about because of the dominance of the inner, middle, or outer portion of the embryonic tube as the individual matures.

The inside of the embryonic tube matures into the inner organs of the body, and a person dominated by this physique tends to be soft, spherical, and dominated by the digestive process. The character of endomorphs tends to be warm, sociable, relaxed, tolerant, and affectionate, and they tend to grow fat because of their appreciation of food. Mesomorphs are dominated by the growth of the middle portion of the embryonic tube, which matures into muscle and bone. They tend to have wide shoulders, narrow waists, and a larger proportion of muscle in their bodies than the other somatotypes. The character of mesomorphs is active, aggressive, risk taking, callous, and dominant. Ectomorphs are dominated by the development of the outside of the embryonic tube, which develops into the skin and nervous system. They tend to be tall and skinny with a low muscle mass. The character of ectomorphs tends to be oversensitive, inhibited, tense, and avoidant, with a wish for concealment. Most humans are crossbreeds of the somatotypes as most dogs are crossbreeds, and so most people show a mixture of the body and personality traits associated with the different somatotypes, depending on their particular mix of somatotypes.

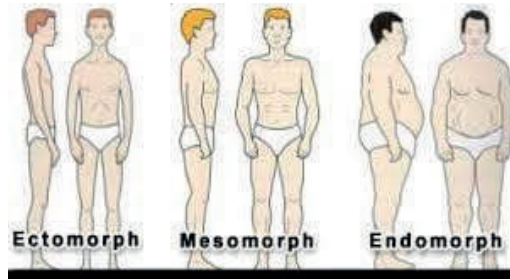


Figure 10.1.2 Types of personality according Sheldon’s constitutional psychology⁸²

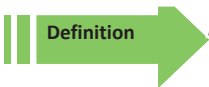
Vividly biological approach appears in S. Freud’s psychoanalyses. According to his teachings, all human behavior is caused by unconscious biological drives and instincts.

Scientific approaches on Personality research

2. *Sociogenetic approach* explain that individual become personality only by ways of socialization.



***Socialization* is the process by which an individual learns and internalizes the rules and patterns of behavior of her/his culture, particularly in childhood but continuing through adulthood. This involves learning and mastering societal and cultural norms, attitudes, values, and belief systems, as well as the particular skills needed for daily living and performance of the person’s cultural economic functions⁸³.**



***Socialization agents* are the people, institutions, and organizations that exist to help ensure that socialization occurs⁸⁴.**

Thus, socialization helps people being born biologically distinctive to become a personality only through social conditions.

3. *Social learning approach* considered that personality is the result of social learning process (E. Thorndike, B. Skinner).

⁸² http://criminology.wikia.com/wiki/Sheldon's_Constitutional_Theory:_Somatotyping

⁸³ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 502

⁸⁴ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 502

Social learning is the processes by which an individual acquires the capacities and knowledge necessary to cope with life successfully in a particular culture. In learning theory, the process of acquiring socially effective behaviors including through observational learning⁸⁵.

Social learning theory Social learning theory is a collection of theories that share the common goal of describing and explaining how the social environment influences individuals' behavior and how individuals affect their social environment. These bidirectional effects are believed to occur on a more or less continuous basis and to change dynamically as behavior and context change and evolve over time. This process is sometimes referred to as dynamic reciprocal determinism. Social learning theories differ fundamentally from psychodynamic theories, in which individuals' behavior is viewed as being influenced by mental forces outside their control, and

Classic behaviorist approaches, in which behavior is considered to be controlled solely by environmental stimulus conditions. In social learning theories, individuals are seen as agented and active in their planning and pursuit of life goals and in thinking about themselves, others, and the world. Early social learning theories were advanced in the 1950s and 1960s by psychologists such as Albert Bandura (e.g., social modeling of aggressive behavior) and Julian Rotter (e.g., locus of control). These early theories paved the way for later, more cognitively oriented approaches to understanding social behavior and personality, social cognitive theories.

4. *Psychogenetic approach* does not deny biological basis or social environment e.g. personality development, but believe that personality development correlates with mental processes development. Here, the following trends stand out:

- Psychodynamic concepts explaining behavior through emotions, drives and other components of non-rational psyche (American psychologist E. Ericson);

- Representatives of cognitivism believe that personality development based on development of cognitive intelligence (J. Piaget, J. Calley, etc.);

- Personological approach focus of personality development generically (E. Spranger, K. Buhler, A. Maslow and others).

5. *Biopsychosocial approach* in domestic psychology based on main methodological idea that all mental activity of individual is determined by the unity of biological and social factors that are mutually supportive and defining each other.

⁸⁵ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 502

Biopsychosocial Approaches to Personality

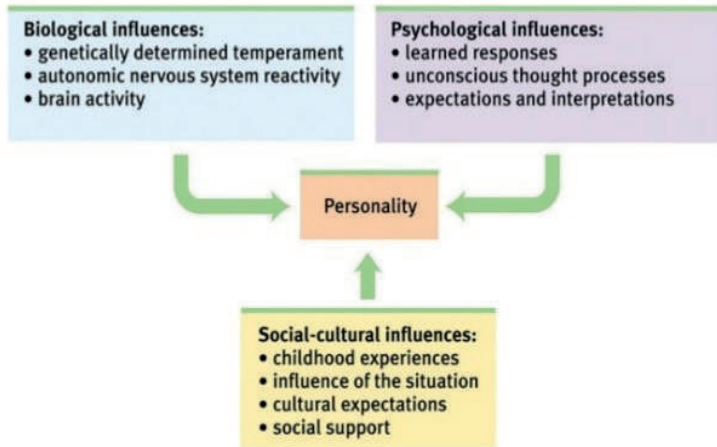


Figure 10.1.3 Bio psychosocial approach features⁸⁶

In addition, biological and social factors play their important role only in condition of active activity of personality. Active side of activity provides interaction with the environment, adaptation to the environment and its changes stimulate the individual participation in the life and activity.

Thus, personality development depends on several significant factor such as biological (for example, genetic level), social (for instance social institutions) and educational one. However, all this factors may influence on personality and individuality development only through activity and communication with other people.

10.2 Structure of Personality

Psychological structure of personality is a system of social important psychological features of personality. This system develops through lifespan and determined personality behaviour and activity.

Psychological structure of personality include such characteristics like

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http://ebooks.bfwpub.com/myersAP1e/figures/12_14_big.gif

psyche properties (temperament, character, ability), life experience, psyche states, self-consciousness, individual features of cognitive processes, etc.

Structure of personality has been developing through social interactions. More over structure of personality is a product of his development.

There are a lot of classifications of personality structure in Psychology. Let's see several of them which are more well-known in domestic psychology.

Table 10.2 Basic ideas about the structure of personality in domestic psychology

Author	Main idea
S.L. Rubinstein	Personality structure includes: <ol style="list-style-type: none"> 1. Orientation is evident in needs, interests, beliefs, dominant motives of activity and behaviour. 2. The knowledge, skills – acquired in the course of life and cognitive activity. 3. Individually-typological features – appear in temperament, character and abilities.
V.N. Myasishev	Unity of personality is characterized by: <ol style="list-style-type: none"> 1. Orientation (the dominant attitude: to people, to myself, to the objects of the external world) 2. General level of individual development 3. Dynamics of neuro-psychological reactivity (meaning not only the dynamics of higher nervous activity, but also the objective dynamics of living conditions). 4. Motivation
A.G. Kovalev	Personality as synthesis of complex structures: <ol style="list-style-type: none"> 1. Temperament (the structure of the natural properties) 2. Orientation (the system needs, interests, ideals) 3. Abilities (system of intellectual, strong-will and emotional properties).
AV Petrovsky	Personality is the subject of activities and relationships with other people.
A.F. Lazurskii	Personality as a result of adaptation to the environment (relationships, ideas, values). Personality is a unity of 2 psychological mechanisms: internal (mental functions) and external (in relation to the environment and objects). The mechanisms are interrelated.

Continued Table 10.2

K.K. Platonov	<p>Dynamic structure of personality include:</p> <ol style="list-style-type: none"> 1. The orientation. This substructure is formed by education and includes beliefs, interests, ideals, desires etc. 2. Social experience. This substructure brings together the knowledge, skills, abilities, habits acquired through personal experience by training, 3. Specific features of psychological processes. This substructure combines the individual characteristics of certain mental processes or mental functions: memory, sensation, perception, thinking, emotions, feelings, and will, which are formed in the course of social life. 4. Biopsychic properties. This is biologically conditioned substructure combines typological properties of individual such as sex, age features and pathological changes, 5. All of these substructures are closely linked and appear as a single entity, which expresses such as complex integrative concept of personality.
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There are many different theories of personality within different schools in foreign psychology. The main ideas of the foreign psychology:

1. The identity has its own structure

2. Individual difference between people is important.

3. Personality is formed under the influence of external and internal factors, including genetic and biological predisposition, social experience and the environment.

4. Personality affects behavior. Thanks to the possession of the individual person has consistently for a long time and under different conditions.

Personality is characterized by self-awareness, activity, self-image, self-esteem, self-respect, orientations, sustainable system of motives, needs, interests, ideals, beliefs, abilities, qualities and attributes, character, emotional responses etc.

All this characteristics determine personality identity.

Individuality is uniqueness of the individual psyche and personality, its originality. It manifested in temperament and personality traits, emotional and volitional spheres, the interests, needs and characteristics of personality.

Thus, the term “Personality” describes one of the most significant levels of human organization, namely the features of its development as a social being.

The structure of Personality usually includes: the ability, temperament, character, will, emotions, motivation and attitudes. Psychological structure of Personality is a holistic system formation, the unity of socially significant

properties, qualities, attitudes, relationships, actions, algorithms and human behavior.

All these structures arise from the relationship of mental personality traits that characterize a stable, constant level of activity, providing the best possible individual adaptation to the effects of stimuli due to adequacy of their reflection.

10.3 Orientation of Personality and Activity

Activity is the basis of Personality. There are voluntary and involuntary activities. Voluntary activity is shown to achieve a certain result, in the form of pre-set goals, monitored during the process. Spontaneous activity is associated with emotions, sleep, dreams. By involuntary activity individual passively reflects environment. Leading characteristics of Personality is allocated by its orientation.

Orientation of personality is a set of stable motives, attitudes, beliefs, needs and aspirations, focusing on certain human behavior and activity, in order to achieve relatively complex life goals. Orientation is conditioned by the learning and education processes, acts as the property of personality, which manifests itself in the ideological, professional orientation, in activities related to individual hobby.

There are three main types of personality orientation: personal, business, and collectivistic.

Personal orientation is related with predominance of own motives, prestige etc. Such individual often busy themselves, their feelings and experiences and little responds to the needs of the people around him.

Business focus reflects the predominance of motives generated activity of learning new skills and abilities. Typically, such individual prefer to cooperate with people in order to reach goals.

Focus on mutual action occurs when individual actions determined by needs to communicate, a desire to maintain good relations with co-workers, school etc.





Knowledge of content and structure of personality orientation gives an idea of the prevailing orientation of his thoughts and aspirations. It allows correctly assessing and, very importantly, to predict human behavior in certain situations, to prevent deviation from the standard rules, providing effective educational impact on him.

10.4 Theories of Personality

Definition

Personality theory is any integrated set of constructs which attempts to understand the individual as a unit, including shared traits, behavior patterns, values, interests, plans and motives, self-understanding and worldview, abilities, and emotional patterns that determine characteristic behavior and thought⁸⁷.

Table 10.4 Main Theories of Personality

Perspective	Founding theory	The viewpoint
Psychodynamic	S. Freud, C. Jung and others 	Source of human activity is instinctual drives. Human predetermined by biological instincts. Struggling between libido (animal instincts) and the pressure of socialization
Personality trait	G. Allport and H. Eysenck 	Personality includes such features as extraversion and deceitfulness
Humanistic	C. Rogers, A. Maslow 	People seeking personal growth and striving toward becoming their full selves
Social-cognitive	G. Kelly and W. Mischel 	People behave in order to cope with social pressure and solve social problems

⁸⁷ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 375

The comic theater of the classical and Renaissance ages presented personality types as stable and well-defined. Once a character entered, the audience knew what to expect of him. If the actor wore the mask of the cowardly soldier, he would brag and run away; if he wore the mask of the miserly old man, he would jealously guard his money.

As we have seen, the trait approach has amended this view in important ways.

According to the *psychodynamic approach*, some people are more sociable than others, or that some are more impulsive or emotionally unstable. But they contend that it is superficial to explain such tendencies as either the expression of a personality trait or the product of situational factors.

Freud devised a conception of personality that encapsulated these conflicting forces within three distinct subsystems: the *id*, the *ego*, and the *superego* (Figure 10..4).

Psychodynamic psychology

Psychodynamic psychology emphasizes the systematic study of the psychological forces that underlie human behaviour, feelings, and emotions and how they might relate to early experience.

- Consciousness is the awareness of the self in space and time and is defined as human awareness to both internal and external stimuli.

- Sigmund Freud divided human consciousness into three levels of awareness: the conscious, preconscious, and unconscious. Each of these levels corresponds and overlaps with his ideas of the *id*, *ego*, and *superego*.

- Most psychodynamic approaches use talk therapy to examine maladaptive functions that developed early in life and are, at least in part, unconscious.

- Carl Jung expanded upon Freud's theories, introducing the concepts of the archetype, the collective unconscious, and individuation.

- Freud's theory describes dreams as having both latent and manifest content. Latent content relates to deep unconscious wishes or fantasies while manifest content is superficial and meaningless.

- Displacement A redirection of an impulse from a channel that is blocked into another, more available outlet.

- Reaction formation A mechanism of defense in which a forbidden impulse is turned into its opposite.

- Rationalization A mechanism of defense by means of which unacceptable thoughts or impulses are reinterpreted in more acceptable and, thus, less anxiety-arousing terms.

- Projection A mechanism of defense in which various forbidden thoughts and impulses are attributed to another person rather than the self.

- Stages of psychosexual development The sequence of four developmental stages from infancy through the attainment of adult sexuality that is considered universal in psychoanalytic theory: the oral stage, the anal stage, the phallic stage, and the genital stage.

- Unconscious processing includes several theories: threat simulation theory, expectation fulfilment theory, activation synthesis theory, continual activation theory.

- One application of unconscious processing includes incubation as it relates to problem solving: the concept of “sleeping on a problem” or disengaging from actively and consciously trying to solve a problem in order to allow one’s unconscious processes to work on the problem.

- The study of neural correlates of consciousness seeks to link activity within the brain to subjective human experiences in the physical world.

- In a perceptual illusion, like the Necker Cube, the physical stimulus remains fixed while the perception fluctuates, allowing the neural mechanisms to be isolated and permitting visual consciousness to be tracked in the brain⁸⁸.

Behaviourist psychology

Behaviourist psychology should concern itself with the observable behaviour of people and animals, not with unobservable events that take place in their minds.

- The main influences of behaviourist psychology were Ivan Pavlov (1849-1936), Edward Lee Thorndike (1874-1949), John B. Watson (1878-1958), and B.F. Skinner (1904-1990).

- The idea that we develop responses to certain stimuli that are not naturally occurring is called “classical conditioning.”

- Operant conditioning refers to how an organism operates on the environment or how it responds to what is presented to it in the environment.

- Reinforcement means to strengthen, and is used in psychology to refer to any stimulus that strengthens or increases the probability of a specific response.

- There are four types of reinforcement: positive, negative, punishment, and extinction.

- Behaviourist researchers used experimental methods (puzzle box, operant conditioning or Skinner box, Little Albert experiment) to investigate learning processes

- Today, behaviourism is still prominent in applications such as gamification⁸⁹.

⁸⁸ Stangor Ch., Walinga J. Introduction to Psychology - 1st Canadian Edition. 2010 Charles Stangor. This Textbook Is Available For Free At Open.Bccampus. – P.49

⁸⁹ Stangor Ch., Walinga J. Introduction to Psychology - 1st Canadian Edition. 2010 Charles Stangor. This Textbook Is Available For Free At Open.Bccampus. – P.56

Humanistic psychology

- Humanistic psychology emerged as the “third force” in psychology after psychodynamic and behaviourist psychologies.
- The key principles of humanistic psychology include human capacity for self-actualization, self-direction, and choice.
- Carl Rogers identified five principles of a fully functioning person as open, present, trusting, creative, and fulfilled.
- Humanistic psychology relies on subjective factors and utilizes qualitative methods of study.
- Abraham Maslow introduced a hierarchy of human needs including physiological, safety, belonging, esteem, and self-actualization.
- With the advance of humanistic psychology, human motivation theory shifted from a purely external or extrinsic focus to the acknowledgment of an intrinsic focus.
- Positive psychology recommends focusing on people’s strengths and virtues as a point of departure rather than analyzing the underlying psychopathology.
- Flow is a state of optimal performance that can be entered when a person is wholeheartedly performing a task or activity for intrinsic purposes.
- Cognitive psychology is the study of mental processes such as attention, memory, perception, language use, problem solving, creativity, and thinking.
- The main premise of evolutionary psychology is that while today the human mind is shaped by the modern social world, it is adapted to the natural environment in which it evolved⁹⁰.

There are many personality theories in psychology due to complicated nature of psyche. That is why each theory has own benefits and limitations. Let us do brief comparison of it.

Psychodynamic psychology

Advantages:

1. Investigation of deep substructures of the psyche such as unconscious;
2. Using of clinical methods, methods from therapeutic practice;
3. Study of client’s real experiences.

Disadvantages:

1. High subjectivity of theoretical explanation;
2. Using many metaphors in order to define scientific knowledge about psyche;
3. Low validity that relates with lack of experimental data in order to prove the theory.

⁹⁰ Stangor Ch., Walinga J. Introduction to Psychology - 1st Canadian Edition. 2010 Charles Stangor. This Textbook Is Available For Free At Open.Bccampus. – P.66

4. Focusing on clients' past experience in order to determine his present problems;

5. Sexual interpretation of human activity and personal problems.

Behaviourist psychology

Advantages:

1. Using systematic approach in order to explain individual behavior;

2. Define roles of situational variables and environmental parameters in order to find determinants of behavior;

3. Use laboratory experiment, which allows establishing the cause-effect relationship between behavior and environment.

Disadvantages:

1. Reject studies of individual's consciousness;

2. Neglect by important psychic phenomena.

3. Mechanistic approach of human behaviour interpretation, which determined only by the formula S (stimulus) - R (reaction).

4. Ignoring issues of inner motivation in understanding human behaviour.

Humanistic Psychology

Advantages:

1. Investigate not only deviations, difficulties and negative aspects of human behavior, but also define positive aspects of personality development.

2. Study of personality development mechanisms, such as self-development and self-improvement.

Disadvantages:

1. Experimental researches insufficiently developed;

2. Ignoring the natural, biological part of human being.

3. Do not take into account influence of society on the development of personality.

Social-cognitive psychology

Advantages:

1. Objective approach to study of personality, high validity and reliability of scientific research of personality;

2. Analysis of consciousness activity by statistics;

3. Active using of mathematical modeling.

Disadvantages:

1. Cognitive processes detach from the personality;

2. Conscious activity is ignored;

3. Impossibility grasping human real life experiences, tracing and explaining its dynamics.

Control questions:

1. Define main differences between concept of “Individual” and concept of “Personality”.
2. How personality traits influence on learning process?
3. Define concept of “Individuality” in domestic psychology
4. Analyse how structure of Personality influence on human interactions.
5. Compare foreign and domestic Personality Theories.
6. Explain how Personality Traits effects human communication.
7. Analyse differences between Biogenetic and Sociogenetic Approaches.
8. Is constitutional psychology still popular in current psychology?
9. Compare Humanistic and Social-cognitive Approaches.
10. Why there are different definitions of Personality?

CHAPTER 11. TEMPERAMENT

Individual differences are psychological characteristics that distinguish one person from another. Individual differences indicate individual common psychological patterns of mental activity. Individual differences based on congenital anatomical and physiological characteristics of human and also developed by influence of social environment. The originality of individual is determined by the individual characteristics of mental processes due to the basic features of the nervous system (neurodynamic differences), temperament features (psychodynamic differences), character, manifestations of general and special abilities, psychophysiological and social activities and needs, motivation, etc.

Thus, individually psychological features individually vary and they include:

- ◇ Temperament,
- ◇ Character,
- ◇ Abilities.

11.1 Historical Ideas about Temperament

Temperament is a combination of properties that determine the dynamics of functioning of mental processes and human behavior.



***Temperament* – the basic character of the person present at birth from which personality develops. It is usually assumed to include energy level, responsiveness, and exploratory drive⁹¹.**

Properties of temperament biologically conditioned, but their influence on human character formation is very large.

Temperament largely determines human behavior, its individual manifestations.

Temperament is a link between the body and the personality.

Few centuries later, the Roman doctors began to use the word «temperamental» (“the proper proportions of parts”) to indicate mixed proportions of the liquids in human body.

Physician and anatomist C. Galen expands the classification of temperament.

⁹¹ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 538

Then ancient physicians limit the number of types of temperament to four. According to this idea, temperament types were determined by the following relation of body fluids: blood predominance (“Sanguis” – “blood”) gave a sanguine temperament; prevalence of lymph (“phlegm” – “mucus”) is phlegmatic; yellow bile (“hole” – “bile”) is choleric; black bile (“melanchole” – “black bile”) is melancholic.

Later, these names have lost their scientific status, but preserved as a tribute to history.

Since ancient period concept of temperament underwent many changes and have been enriching with new knowledge.

Summing up all existing theories, it is possible to distinguish three major systems.

1. Humoral theory. This direction included ancient physician’s views, and ideas of I. Kant and P.F. Lesgaft.

I. Kant believed that blood is a basis of individual characteristics of temperament. P. Lesgaft believed that the prevalence of temperament due to the properties of circulatory system such as thickness and elasticity of blood vessels, shape of the heart, etc.

These characteristics determine the speed and force of blood flow which resulting in duration of reactions to stimuli and excitability organism.

According to Contemporary Endocrinology, certain properties of the human psyche (reactivity, balance, sensitivity) are largely determined by individual differences of the hormone system activity.

2. Somatic theory (the beginning of the twentieth century) determines types of temperament by dependence on human body.

Prominent representatives of this trend are the E. Kretschmer and W.H. Sheldon. These scientists put a direct relationship between growth, fullness, the proportions of the human body and especially his temperament.

3. The doctrine of higher nervous activity, which is based on I.P. Pavlov’s views about dependence of temperament on properties of the nervous system.

I.P. Pavlov believed that the type of higher nervous activity is defined by three properties of nerve processes:

- 1) Power is an evidence of performance;
- 2) The balance indicates the ratio of the basic nervous processes of excitation and inhibition;
- 3) Mobility is how fast the processes of excitation and inhibition can replace each other⁹².

Combination of selected properties gives four types of higher nervous activity:

Weak as the first type corresponds to a melancholy temperament type.

⁹² https://en.wikipedia.org/wiki/Pavlov's_typology

Strong unbalanced as the second type corresponds to the choleric temperament.

Strong balanced as the third type is sanguine.

Strong balanced, inert as the fourth type corresponds to the phlegmatic temperament.

B.M. Teplov and V.D. Nebylitsin allocated additional properties of the nervous system:

1) *dynamic* – how quickly produced conditioned reflexes;

2) *liability* – how quickly emerge and flow processes of excitation and inhibition;

3) *high sensitivity* – inherent in individuals with a weak type of higher nervous activity.

Recent scientific evidence suggests inheritance of individual properties of the nervous system. Thus, temperament is a different biological characteristic of the psyche.

11.2 Types and Properties of Temperament

In current psychology, classical classification of temperament is extent arbitrary which is related to mixed type of temperament.

Each temperament type has its own combination of mental properties. For example, different degree of emotional activity. The level of activity varies from inertia, sluggishness to violent outbursts of energy.

Externally activity manifests itself in forms of rate of reactions, their swiftness or slowness. The level of activity can be seen in human speech features and individual manifestations of handwriting.

The more active a person is, the more sweeping in his handwriting, wider spacing between letters and words, and letters become bigger. For such individual it is difficult to perform delicate movements with small amplitude, carefully prescribe words.

The activity also effects on functioning of mental processes: perception, memory, thinking, imagination, attention. For example, an active person remembers the material faster.

The communication activity is manifested by verbal and non-verbal levels.

An active individual vivid facial expressions and pantomime, rapid speech, excessive gestures, as a rule, their voice is stronger, louder and vice versa.

Activity may manifest itself in reactivity, for instance, by hypersensitivity reaction to the smallest stimuli. This property characterizes people with a weak type of higher nervous activity.

Another important property of temperament is plasticity – rigidity.

These qualities manifest in the human ability to quickly (plasticity) or slow

(stiff) adapt to changing environmental conditions, such as the transition to another job, moving to another place of residence, etc.

Plasticity n. Malleability, flexibility, or adaptability, especially as applied to the growth and development of neural and other tissue. This seems to be inherent in the expression of genetic forms and is assumed to be the basis for the differences observed between genotypes and phenotypes. It is also one of the processes by which the brain learns and develops sensory acuity.

Rigidity n. 1. Resistance to change as in difficulty bending at the joint. 2. A character trait which leads the individual to resist change in ways of thinking and acting which is associated with intolerance of ambiguity and many kinds of racial and ethnic prejudice (Figure 11.2):

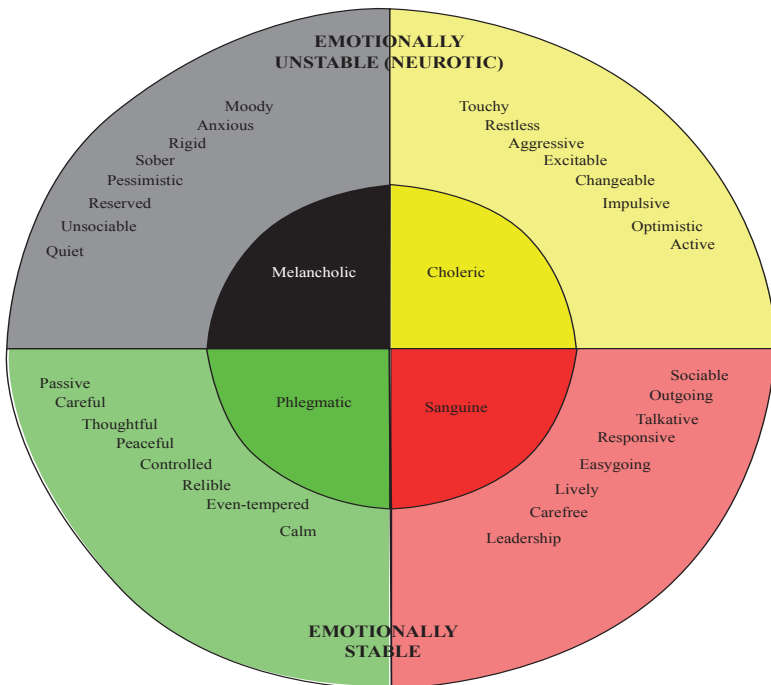


Figure 11.2 Types of Temperament (H. Eysenck)⁹³

There are also very important qualities of temperament, such as extraversion – introversion.

⁹³ <https://image.slidesharecdn.com/atozpersonalitytheories-140312001737-phpapp01/95/a-to-z-personality-theories-a-complete-guide-to-human-behavior-33-638.jpg?cb=1420139246>

Extrovert is a person who is actively cooperating with the outside world, it is inherent in the increased sociability, and his circle of friends is very wide.

Extroverts are individuals who are high in terms of outward focus. Extroverts are at one end of an introversion-extroversion continuum on which most people fall somewhere in the middle range. Extroverts tend to be outspoken, outgoing, and optimistic.

There is research evidence that extroversion stems, at least in part, from differences in the basic stimulation level of the ascending reticular activation system (ARAS) in the brainstem, commonly referred to as the attention center of the brain. Extroverts have inherently lower levels of stimulation in the ARAS and therefore require more activity in order to stimulate the attention center of the brain. Introverts, on the other hand, are already sufficiently stimulated and therefore require far less outward stimulation. Stimulant drugs such as Ritalin commonly used for treatment of attention disorders operate on this principle; by stimulating the attention center of the brain, the individual becomes less motivated to seek outward stimulation.

The introvert is more focused on his own inner world, than on others, closed circle of friends is very narrow, it is prone to self-analysis, social adaptation difficult.

Some combination of the considered characteristics gives different types of temperaments.

However, concept of four types of temperament is useful for practical applications.

Briefly characterize these types.

Sanguine is characterized by severe mental activity, lively and agile, expressive facial expressions and movements respond quickly to events, it is relatively easy to experiencing trouble extrovert.

Phlegmatic – his mood is different persistence, sense of deep and stable, inactive mimicry, speech and movement slow, introvert.

Choleric has high activity, passion and vigour, prone to violent emotional outbursts, but is able to quickly calm down and change the mood on the contrary, an extrovert.

Melancholy – easily vulnerable, impressionable, but apparently there is weak, muffled speech, movement restrained introvert.

Note that you cannot select any “good” nor “bad” type of temperament; each has both advantages and disadvantages.

For example, sanguine can increase efficiency, easily adapt to most situations, but work usually is not completely finished because his interests quickly fade.

Melancholic, on the other hand, slowly incorporated into the work, but in most cases bring it to the end, his circle of friends is very narrow, but such relations are long-term and stable.

Choleric can “move mountains”, but in a short time, because of lack of exposure.

Phlegmatic are often not able to quickly gather and understand what is happening, but he is able to work long and hard, striving for the goal.

Thus, any type of temperament has both advantages, which should be strengthened and develop in every way, and disadvantages, the manifestation of which any person is able to inhibit, through education and strong-willed efforts.

<p style="text-align: center;">Cholerics</p> <p style="text-align: center;">[E+] Extraverted / [N+] Neurotic</p> <p style="text-align: center;">quick reaction + long/intense reaction</p> <p style="text-align: center;">bold + task-oriented</p> <p style="text-align: center;"><i>active, excitable, aggressive, impulsive</i></p>	<p style="text-align: center;">Sanguines</p> <p style="text-align: center;">[E+] Extraverted / [N-] Calm</p> <p style="text-align: center;">quick reaction + short/mild reaction</p> <p style="text-align: center;">bold + relationship-oriented</p> <p style="text-align: center;"><i>sociable, talkative, easy-going, carefree</i></p>
<p style="text-align: center;">Melancholics</p> <p style="text-align: center;">[E-] Introverted / [N+] Neurotic</p> <p style="text-align: center;">slow reaction + long/intense reaction</p> <p style="text-align: center;">quiet + task-oriented</p> <p style="text-align: center;"><i>moody, rigid, pessimistic, quiet</i></p>	<p style="text-align: center;">Phlegmatic</p> <p style="text-align: center;">[E-] Introverted / [N-] Calm</p> <p style="text-align: center;">slow reaction + short/mild reaction</p> <p style="text-align: center;">quiet + relationship-oriented</p> <p style="text-align: center;"><i>passive, even-tempered, controlled</i></p>

Figure 11.2.2 Types of Temperament⁹⁴

11.3 Individual Style of Activity

Various combinations of properties of temperament are characterized by individual style of human activity.

Individual style of human activity can be defined as a set of dynamic characteristics of activities, depending on temperament.

During activities, a person adapts features of his organism and innate properties of the nervous system to environment in order to achieve the best results by lowest cost.

⁹⁴ <https://s-media-cache-ak0.pinimg.com/736x/84/a8/7a/84a87aecc7bcb46f100c65d40879fe81.jpg>

Individual style of activity and temperament are not identical.

Under the influence of life experience, there are certain abilities and skills become a part of individual style of activity. That apparently is often perceived as a manifestation of temperament, for example, the nature of the movements, in fact, is the expression of individual style of activity.

Features of temperament and personal style can either be the same or different.

Features individual style combined into two groups:

- 1) Acquired during life experience accumulation in order to use as a compensation for disadvantages of individual properties of nervous system;
- 2) The most revealing, reinforcing existing inclinations, the beneficial properties of the nervous system, human ability.

Formation of individual style of activity starts from pre-school age regarding training and education how to achieve the best results.

Thus, the features of temperament manifested individual style of activity.

11.4 Temperament and Education Issues

Knowledge of individual differences in temperament is particularly important for people who are engaged in teaching activities.

The knowledge makes possible process of training and education more efficient, ensuring the use of an individual approach to each child.

In order to understanding individual differences of temperament, teacher must carefully observe the patterns of behavior and activities of children in various situations, be able to distinguish the occasional manifestations of temperament traits.

Age-related manifestations of temperament depend primarily on the course of maturation of brain structures, properties of the nervous system.

The younger the children are, the more they are characterized by symptoms of weakness of the nervous system, namely, a small endurance and high sensitivity.

This explains the child's impulsivity, brightness perception, sensibility.

However, the weakness of the nervous system with the rapid recovery of energy is related to increasing mobility of children.

Younger students' nervous system activity is manifested in the ease of interest occurrence and lack of capacity for sustained concentration.

The differences in temperament in children can be expressed in distinctive mental manifestations. Children with a weak type of nervous system perform well repetitive work. However, in situations where there are strong, sometimes unexpected stimuli, such children cannot cope with the activity.

Thus, children with a weak type of nervous system better able to cope with the performance of certain tasks, not with strong one.

Considering the mobility of the nervous processes, we note the following.

Students with high mobility will cope with the task, but with some mistakes.

Those with an inert system worked smoothly, allowing for a minimum number of errors, but not always fit into the allotted time.

In order to determine as precisely as possible the type of the child's temperament, it is important to note the presence of the following features:

1) Activity is manifested in how vigorously the child reaches goals, interacts with others, and overcomes obstacles;

2) Emotionality. As far as a child is sensitive to emotional stress, as far as he is susceptible;

3) Motility expressed in sharpness, speed, amplitude and other muscular movements.

Manners of a child should not be blamed by temperament, for example, bad manners are not always evidence of choleric temperament, but a consequence of upbringing mistakes.

However, it is impossible to underestimate existing differences between types of temperament.

Knowing these differences will allow to correctly understanding and respond correctly to children's behavior, find an individual approach to them, varied educational methods.

Particular teachers' attention often attracts children with choleric and melancholic temperament.

Choleric should be strongly deterring manifestations of violent emotional outbursts, to inculcate the habit of working systematically and calmly, without haste.

Melancholic needs a clear mode, to improve their self-esteem, demand actions related to overcoming the difficulties.

Temperament affects the terms of behavior, however, does not prejudge their compulsory manifestation.

It is well known that, under favourable conditions, melancholic education can develop strong will power and choleric learn to restrain their violent emotional outbursts.

Thus, the knowledge of children's temperament allows making the educational process more efficient, while the traits of temperament are the only one of the prerequisites for the development of human character.

Control questions:

1. Explain how individual differences interrelate with temperament.
2. How temperament determine personality traits?
3. Compare Humoral and Somatic theories.
4. Is it possible to predict stress reactions by temperament?
5. How Higher Nervous Activity determine temperament?
6. Analyse Types and Properties of Temperaments.
7. Is correct to say that Sanguine is more effective in learning process?
8. Explain Melancholy features in human interactions.
9. Analyse Individual style of Activity by temperament features.
10. Compare Temperament and education issues.

CHAPTER 12. PSYCHOLOGY OF CHARACTER

12.1 The Concept of Character



Definition

Character is the whole of the mental processes and behavioral aspects of a person which differentiate him or her from other persons and particularly the prospects and aspects which are consistent over time⁹⁵.

By its nature, the character is a result of individual's social psychological development and it mainly reflects the objective relationship between people and their relationship to various social phenomena, events, etc.

Concept "character" is characterized not all psychological features of individual, but only substantial and sustained one, which is related to the will and motivation of human behavior.

Character is a unique, individual combination of stable psychological traits, constant individual's relations with environment, which is expressed in his behavior, communication, activities and actions.

The manifestation of the character can be seen in the performance of any activity: some prefer challenging activities, finding positive emotions to overcome difficulties.

Character is closely related to temperament, being in the same stable nature. But unlike the temperament, character form during lifetime education and lifetime experience.

Character traits include following blocks:

- 1) system of relationship with environment;
- 2) volitional qualities.

The system of relationship with environment includes relations with:

- 1) other people by characteristics like a honesty, teamwork, conformity, egoism, sincerity, etc.;
- 2) activities (rationality, prudence, diligence, thrift, etc.);
- 3) attitudes to oneself (self-reliance, self-esteem, etc.).

The concept of "character" is not equal to the concept of "Personality". For example, such great personality as F.M. Dostoevsky characterized by heavy, quarrelsome character. It was found that high talent is often associated with psychopathy.

The character is central part psychological structure of individual, affecting the cognitive and emotional processes. It is closely related to needs.

⁹⁵ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 104

Unlike other personal qualities, character is formed at an early age and is characterized by stability.

For example, interests, attitudes may change throughout a person's life.

Thus, character determines the individuality and uniqueness of personality.

Common feature of character and temperament is dependent on the physiological characteristics of the person and especially on types of nervous system. The formation of character is largely due to the properties of temperament, which is closely related with properties of the nervous system. According to I.P. Pavlov, habitual human behavior is a system of well-established responses to repetitive exposure to the environment. Habitual patterns of behavior are caused by properties of the nervous system. In addition, habitual patterns of behavior are caused by variety of sophisticated, stable systems of temporary connections formed in the cerebral cortex under the influence of various stimuli.

Features of temperament may contribute to formation of various traits. For example, organization, discipline is easier to develop for phlegmatic than choleric, and the kindness and compassion for melancholic. Being a good organizer, sociable person is easy for choleric. Choleric work vigorously, passionately, but phlegmatic work methodically, slowly.

Social factors play more important role than biological one in order to shape the character.

Character, as the result of reflection of the whole complexity of life influences, formed in the process of active interaction between individual and environment. Unlike temperament character changes throughout life. Childhood is the main stage of character formation. Character is beginning to emerge from the first days of life under the direct influence of people who are bringing up a child. Character depends on relationship between parents and child. Regarding activity, certain behaviors establish, consolidate and transform in stable and permanent character.

The formation of character is impossible without education activity. Pedagogical and psychological approaches in very of social institutions effect individual character.

12.2 Structure of Character

Character is a holistic system of individual properties. Individual character traits independent of each other, connected to each other in main structure, reflect individual's relationship with different aspects of reality and form a coherent organization.

There are several classifications of character traits. For example, the R.S. Nemov identifies three character traits groups: 1) strong-willed (the desire to

succeed); 2) business (honesty, responsibility, punctuality); 3) communication (openness, sociability, interest and attention to the people).

A.G. Shmelev, M.V. Bodunov, W. Norman and other identified common (self-confidence – lack of confidence, friendliness – hostility; consciousness – emotional stability, anxiety, impulsivity) and private (sociability – isolation, courage – caution; demonstrative – modesty, and many others) character traits.

Here is traditionally allocated traits.

I. Moral traits:

1) expressing the attitude towards society (collectivism – individualism, altruism – egoism, egocentrism, kindness – indifference, polite – rudeness, truthfulness – mendacity, communicative – isolation; openness – concealment;


2) expressing the attitude to work (hard work – laziness, diligence – negligence, orderly – negligence, initiative – passivity and conservatism);

3) expressing the attitude toward themselves (self-assessment – adequate and inadequate).

II. Determined traits: consistency, self-control, strength of will, independence; criticality, suggestibility, responsibility.

Any person can identify more than a dozen personality traits, which are not particularly stand out and appear at regular intervals. If one of the personality traits very bright, it is the so-called character accentuation.

Accentuation character is a concept introduced by the German psychologist K. Leonhard (1904-1988) and indicating excessive expression of individual traits and their combinations, representing the extreme variants of norm, bordering with psychopathy.

 ***Psychopathy* is an archaic term for a mental disorder characterized by lack of guilt and remorse, impulsiveness, rule breaking, and disregard for others which is prevalent among violent criminals who repeat their offenses and which was originally called moral imbecility⁹⁶.**

The severity of the character may be different. Imagine axis, which shows the intensity of the manifestations of characters on it are clearly identified three zones: zone completely “normal” characters (1); area of accentuation (2); zone of strong character deviations, or psychopathy (3). The first and second zones are normal and the third one is pathological. Accordingly, the accentuation is seen as an extreme variant of the norm.

⁹⁶ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 412

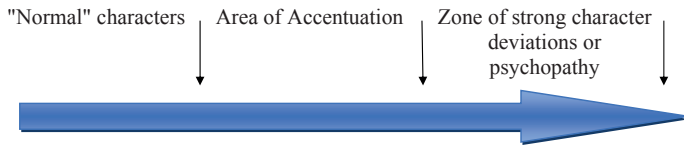


Figure 12.2.1 The boundaries of character accentuations

K. Leonhard believed that almost every person can be assigned at least one of the many accentuated features in his personality.

Accentuation phenomenon may be temporary (age) and permanent. For most people, temporary accentuation detected in stressful situations (for instance, during the crisis). Constantly accented character is usually seen in people with severe childhood.

There are the following types of accentuation:

1. Hyperactive is excessively elevated mood, always cheerful, talkative, energetic, independent, committed to leadership, adventure, risk, punish ignored, self-criticism is absent, high sociability, facial expressions and pantomime. Such a person is very serious about duties and family obligations. Often provoke conflicts. He is optimistic and energetic, often frivolous. Easily irritated;

2. Distimisy is related to consistently low mood, sadness, isolation, pessimism, non-conflict, passivity, slowness in movements, low communicative, individualism, often leads a secluded life.

3. Cycloid characterized by frequent changes of mood and communication;

4. Emotive (Emotional) characterized by excessive sensitivity, vulnerability, deeply experiencing the slightest trouble, too sensitive to the comments, failure, sad mood, sense of duty, kind and compassionate, tearful;

5. Demonstrative express the desire to be in centre of attention and to achieve their goals by any cost (tears, fainting, scandals, illnesses, and unusual hobby);

6. Excitable characterized by slowness of movement and speech, irritable, quick-tempered, bad controls of own behavior;

7. Paranoid person cannot forget the offense, with tendency to prolonged squabbles, active in conflicts;

8. Pedantic person characterized by tediousness expressed in the form of “experience” the details;

9. Psychasthenic person with lowered mood, constant fear for themselves, lack of confidence, long experiencing failure;

10. Labile accentuation characterized by extremely changeable moods, emotions talkativeness, amorous;

11. Schizoid (Introverted, Autistic) accentuation characterized by avoidance communicate with others, talks by necessity, self-absorbed;

12. Conformal accentuation is characterized by high sociability, talkativeness, prefer like the others, disorganized.

positive traits

independent	generous	optimistic	resolute
courageous	considering	active	sincere
imaginative	concentrated	approachable	adaptable
skilled	intelligent	observant	even-tempered
expressive	confident	decisive	rational
enthusiastic	proud	realistic	resilient

negative traits

helpless	selfish	pessimistic	stubborn
cowardly	frivolous	passive	indifferent
unimaginative	distracted	hostile	inflexible
incompetent	unintelligent	unobservant	short-tempered
ambiguous	hesitant	indecisive	unreasonable
obsessive	pompous	exaggerative	defeatist

Figure 12.1 Character traits examples

12.3 Typology of Character

Throughout the history of developmental psychology had been numerous attempts to construct a typology of character.

The researchers proceeded from the following ideas:

1) during ontogenesis formation of character occurs quite early and after that become stable form throughout life;

2) nature of the structure does not form a random combination of personal qualities;

3) based on the typology, the majority of people can be referred to appropriate groups.

Let's consider the most well-known typology of characters.

The ancient Greek philosopher and physician Theophrastus (372-287 BC) described the character as a mark of moral society in personality.

Aristotle believed that a person's character can be determined by identifying it with the animal. For example, if a person has a short and thick neck, like a buffalo, he has a stubborn, impulsive temper; if the neck is thin and long, like a giraffe, such human characterized as shy; long and wavy hair like wool from sheep, characterized by stubborn; a soft man characterized by, slightly curly hair. Aristotle also identified the nature of the strong-willed personality traits.

In the Middle Ages, the Swiss writer I.K. Lavater (1741-1801) proposed a theory of physiognomy, whose main provisions are as follows: human face imprinted by features as character traits rather than natural one. So, constantly cheerful, smiling person has "corners" of lips; in "cold" and haughty individual has thin colorless lips; carnivorous, irritable person has fold between the eyebrows. Even Ch. Darwin held such views.

French writer La Bruyère (1645-1696) in his book "The character or manners of the century" distinguished character types.

In Western Europe by Austrian pathologist F. Gall (1758-1828) was developed theory so called "phrenology" (from the Greek phrenos – the soul, the nature, character).



***Phrenology* – an archaic theory in which the shape of the skull was associated with personality and various abilities. It supposed that different brain areas governed different characteristics and abilities, and those that were strongest in a person would cause the skull to bulge outward while growing so that the resulting bumps indicated the strength of the ability or characteristic associated with the part of the brain beneath it⁹⁷.**

English psychologist Alexander Bain (1818-1903) defined intellectual, emotional and volitional characters.

Russian psychologist A.I. Galich (1783-1848) divided the characters to bad, good and great one. There were attempts to give a more sophisticated classification of characters.

German-American psychologist E. Fromm (1900-1980) showed numerous examples of difficulties in adaptation to foreign society due to character.

American sociologist W. Thomas (1918-1920) characterized marginal personality as a person who has not formed a strong, unambiguous, coherent system of social identities and values, who is experiencing cognitive and emotional problems, and difficulties.

Modern domestic psychologist B.S. Bratus suggested typological model of social character. A structure of individual identify has several fundamental levels:

⁹⁷ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 387

1. Egocentric person's desire only own convenience, prestige and benefits.
2. Group-centring person identifies himself with group. Such individual prefers divide social environment into "us" and "they".
3. Pro-social or humanistic person desire to help other people and become happy by doing this.
4. The spiritual or eschatological person believes that life does not end with death and associated with the spiritual world. This is the level of subjective relationship of human with God.

All four levels anyway present in each individual.

American social psychologist E. Shostrom proposed of manipulative character types. Individual does not born as a manipulator. He becomes so to avoid trouble situations and achieve desired goals.

Manipulation is not a necessary attitude toward life and not useful.

There are several types of manipulator.

1. Dictator. Exaggerating its strength. Dominates and doing everything in order to control their victims.
2. Victim dictator. Exaggerate their sensitivity.
3. Calculator. Exaggerating their control. He is lying, trying to outwit and check other people.
4. Sticks. The complete opposite of the calculator. Exaggerating their dependence. It lets others do the work for him.
5. Bully. Exaggerating their aggressiveness, cruelty.
6. Nice guy. He tends to exaggerate their diligence. A nice guy almost always wins.
7. Judge exaggerates its criticality and tends to blame everyone and everything, full of anger, with difficulties to forgive.
8. Defender is contrary judge. Excessive stresses support towards others and indulgence to the errors. He is ready to take care of the needs of others rather than do their job.

Four basic manipulations can be identified.

Active manipulator tries to control others by using active methods. He avoids showing their weakness in relationship by pretending to be a man full of strength.

Passive manipulator is the opposite activity. Being unable to control his life, he refuses every effort to allow you to manage his life.

Competitor manipulator considers life as a battle in which all other men are rivals or enemies, real or potential. He varies passive and active methods of manipulation.

Indifferent manipulation. This is the main form of manipulation. Manipulator acts indifferent to the whole person by words "I do not care".

Thus, main reasons of manipulation are getting full power over another person.

12.4 Forming of Character

Formation of character starts from very beginning of human life. Relationships with others, especially with the mother or with those who are directly caring for a child play leading role in formation of character.

Age from 0-3 to 9-10 years is sensitive (most favourable) period for formation of character.

At this time, the process of communication with adults and peers is particularly active. A character of the mother's communication with her child at the first months of his life influences on formation such qualities as kindness and sympathy, sociability, or contrary, selfishness and callousness, indifference to people. Later, in the early and pre-school age, develop such character traits as diligence, honesty, responsibility, and others.

The source of the formation of these qualities is available through games and forms of domestic labor.

School helps to design the character traits associated with the relationship between people. Expanding circle of friends (classmates, teachers) contributes to this design.

Due to not use these social methods character begin breaking, accompanied by internal and external contradictions. The result is not always positive. Most often, there is a partial change of character traits, leading to some compromise.

After school period, character formation is completed. Thus, the character begins to form from the first months of life and finishing its formation at school age.

Example of describing character:

Description of (the nature) character of a person

The nature of man is largely determined by him. There are features that appear unconsciously, but most people will build their character by themselves. At first sight it is usually difficult to determine the versatility of personality. But even from the initial acquaintance it is possible to make some conclusions. Something you can notice from the facial expressions, gestures, and communication style.

I would like to tell you about the person I care, the nature of which I admire. I was lucky, because I know him from the first days of my life. I want to talk about my father.

Profession largely determines a person's character. Or conversely a person chooses a profession by his nature. Whatever it was, my father was not wrong with the choice of specialty. He's a surgeon. At home my dad is calm and cheerful person. He is always kind and responsive to others. He has many friends, and it's easy for him to find a common language with people. I try to spend time with him as much as possible. He can always cheer me up with a

*good joke or tell an interesting story. Unfortunately, his work takes much time. When I was a child, I even resented him because of this. But later I realized that his work is very important, because it saves lives. At work, he is always reserved and collected. It seems that he always knows what to do and never gets nervous. Patients always feel his support and attention. Sometimes we meet on the streets his former patients. They thank him and say many kind words. Father being shy by nature, becomes confused of the words of thanks. I am proud of him and I want to become in the future the same.*⁹⁸

Control questions:

1. Analyse how Concept “Character” relate with temperament.
2. Why character determines the individuality of Personality?
3. Why character determines uniqueness of Personality?
4. Describe Features of Character in education success.
5. Is Structure of Character determine cognitive processes of individual?
6. Analyse Character as a holistic system.
7. Describe Accentuations of character and explain their effects on individual behavior.
8. Is it possible to correct of Accentuations?
9. Is Temperament influence on Character Formation?
10. Analyse sources of Character Formation.

⁹⁸

<http://ycilka.net/tvir.php?id=578>

CHAPTER 13. PSYCHOLOGY OF ABILITIES AND TALENT

13.1 Introduction to Psychology of Abilities

Every activity requires individual's specific qualities that determine its suitability and provide a certain level of success.



Definition

Ability is a capacity to accomplish a task at the present moment. This implies that any learning or developmental process necessary to the task has already been accomplished. Ability often contrasts with aptitude or potential or inherent but unrealized capacity which needs further learning or development to become an ability. Intelligence tests measure ability and are sometimes used to infer aptitude for future learning⁹⁹.

However, each ability has biological basis, which allow them to develop. Disposition is a biological anatomical physiological basis of any ability. Disposition gets own certainty in ability, only being included in activities.

Dispositions are biological, morphological and functional features of:

- the structure and function of cerebral cortex;
- sensory systems;
- typological features of the nervous system;
- functional asymmetry of the brain;
- anatomy of motor organs.

Dispositions are organic base of ability and other mental characteristics, such as temperament, character, etc. But their formation depends on living conditions and human activities. Human dispositions are varied and can develop in different directions. On basis of same dispositions it can develop different abilities.

On the other hand, abilities development depends on various conditions. For example, child's math ability has not a guarantee that the child will become a great mathematician. Without appropriate conditions (special education, teachers working creatively, family, etc.) ability will not be developed.

Abilities are individual's possibilities to become successful in particular area of social activity. Why some people get great success in their job activity

⁹⁹ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 1

than others? Because each activity (educational, music, design, literature etc.) has certain demands such as speed of reactions, properties of personality. If a person has individual psychological characteristics, which best meet requirements of relevant activities, it means that he will be capable of it.

Any activity requires from individual not only one single ability, but also a number of them. For example, a literary work is related with observation, imagination, and ability to speak accurately and expressively.

Thus, any speciality provides opportunities for learning to variety of activities. In addition, lack of capacity can be compensated by hard work, perseverance, exertion.

There are equivalent components in the structure of each ability:

1. Leading properties. For example, in pedagogy leading feature is ability to love children.

2. Supporting properties. For instance, in pedagogy supporting properties are pedagogical tact, observation, etc.

Traditionally also decided to allocate the levels of development of abilities:

1. reproductive;

2. reconstructive;

3. creative.

However, the practice (empirical studies) shows that creativity and reproductive abilities are quite different in nature, therefore, develop independently of each other, each of them can be identified at distinct levels of development.

13.2 Types and Levels of Ability

Abilities are divided into general and special groups. There are the following types of abilities:

1. intelligence and special;

2. training;

3. mathematics;

4. construction-engineering;

5. music;

6. literature;

7. physical abilities.

Educational and creative abilities differ from each other. Educational ability determines the success of training and education, assimilation of human knowledge and skills, formation of personality traits, while creative ability determines creation of objects and spiritual culture, production of new ideas, discoveries and works.

The nature of the general abilities (intelligence, creativity and search activity) is determined by the particular organization of cognitive functions and individual experience (including knowledge and skills). General abilities are called because they are necessary for the performance of all activities, regardless of their complexity. In the intelligence there are differing versions

Nature of special abilities is a special quality that meets the requirements of a narrow circle of activity.

It is possible to allocate a common basis for each type of activity, which will combine special individual abilities into a coherent system, and without which this ability would not take place at all.

Specific examples: For mathematics is not enough to have a good memory and attention. People who are good at math, distinguished by the ability to capture the order in which must be placed the elements necessary for a mathematical proof. Mathematical creativity is based not only on knowledge and experience, but on the spatial imagination, as the main condition of mathematical thinking.

Musical abilities are special one and are determined by the nature of music.

Technological content of musical abilities can be divided into three groups:

1. proper technical (playing technique on this instrument or voice control singing);

2. composite (for composing music);

3. control, hearing (the pitch or tonal intonation, etc.).

Types of abilities depend on their direction, or specialization. These types can be divided into general and specific, theoretical and practical, educational, interpersonal and subject-activity-related abilities. General ability is a prerequisite for whole development of individual.

General ability is connected with a system of individual psychological characteristics of personality, which determines efficiency of learning process, various activities and communication. In foreign psychology, these abilities are referred to concept of “intelligence” which is equivalent to concept of “mental capacity”.

Theoretical ability mostly determines abstract logical thinking (for example, it is perfectly developed among scientists, philosophers).

Educational ability correlates with success in pedagogic area.

Interpersonal ability determines communication and interaction among people, and subject-activity-associated ability relate with technology, sign systems, etc.

The structure of the individual abilities depends on level of its development. Activities can develop reproductive and creative levels of ability: reproductive level is associated with a high ability to absorb already known ways of performing activities, patterns of communication; creative level is connected

with the development a new, original product, by finding new ways of doing something. It is obvious that both levels are closely interrelated: the reproductive level includes elements of creative and vice versa.


Each person has different “sets” of abilities. Individually unique combination of abilities formed throughout life and determines the uniqueness of the individual. The success of any activities is ensured by the presence of a combination of abilities working on the result. Activities of some abilities can be replaced by other one, similar in appearances, but different in their origin. The success of same activity can be provided by different abilities, so no one’s ability can be compensated by the presence of the other, or even the whole complex. Therefore, individual uniqueness of individual abilities referred to “individual style of activity”.

Another term used by B.M. Teplov is inclination. Inclination is a certain relationship to work activity. Inclination and ability are closely related. Inclination is a motivational component of activities. Therefore, activities may not start without a definite inclination, and ability, respectively, will not be formed. On the other hand, if no success, the human tendency is not be objectified.

In extreme conditions, when there is a need to solve the most important task, the person due to the stress response can be restored, or greatly strengthen those or other abilities to such levels as giftedness, talent and genius.

13.3 Psychology of Giftedness, Talent and Genius

It is necessary to consider the concept of giftedness. The origin of the term is based on the idea of “gift” as high inclinations that nature rewards some people. Giftedness should be understood as an indicator of the high level of ability, based on the natural predisposition.

 ***Gifted individuals* are those who demonstrate outstanding levels of aptitude (defined as an exceptional ability to reason and learn) or competence (documented performance or achievement in top 10% or rarer) in one or more domains. Domains include any structured area of activity with its own symbol system (e.g., mathematics, music, language) and/or set of sensorimotor skills (e.g., painting, dance, and sports)¹⁰⁰.**

The following are six categories of giftedness to which experts and definitions often refer:

¹⁰⁰ https://en.wikipedia.org/wiki/Gifted_education

1. General intellectual ability;
2. Specific academic ability;
3. Creative ability;
4. Leadership ability;
5. Visual and performing arts ability;
6. Psychomotor ability.

Gifted children, no matter how you define or identify them, have different educational needs than their age-peers. Their education needs to allow them to grow with their unique intellectual development.¹⁰¹

Intellectual giftedness of a child is defined by:

1. The speed of thought;
2. The ability to easily and freely express their thoughts;
3. Exceptional ability to solve any problems;
4. Has good grasp of abstract concepts;
5. Boundless energy;
6. Early and avid reader with advanced comprehension of language;
7. Talks early and has large vocabulary;
8. Problem solver and is not always satisfied with an answer;
9. Questions everything;
10. Easily bored with repetitive tasks;
11. Learns things quickly and at an advanced level;
12. Perfectionist at standards and critical to himself;
13. Interested in adult problems, such as social issues at a young age;
14. Works independently;
15. Has internal motivation and intense focus etc.

I. Akimov and V. Klimenko considered there are not only quantitative, but also qualitative difference between talent and genius. Talent's product is originality. Product of genius is "simplicity". However, I. Akimov and V. Klimenko believe that genius does not appear suddenly. It is born due to talent. According to another view, the talent and genius are not stages of ability development. They are quite different psychological qualities.

Definition

***Talent is a special natural ability or aptitude. Someone who has a natural ability to be good at something, especially without being taught:
Her talent for music showed at an early age.
His artistic talents were wasted in his boring job¹⁰².***

¹⁰¹ <https://educationaladvancement.wordpress.com/2012/05/01/5-definitions-of-giftedness/>

¹⁰² <http://dictionary.cambridge.org/dictionary/english/talent>



Definition

Genius is an exceptional natural capacity of intellect, especially as shown in creative and original work in science, art, music, etc. For example, the genius of Mozart. Genius a person having such capacity. Genius a person having an extraordinarily high intelligence rating on a psychological test, as an IQ above 140. Genius has natural ability or capacity; strong inclination: a special genius for leadership¹⁰³.

Domestic psychologists B.M. Teplov, N.S. Leites, V.A. Krutetskiy et al. have identified some common features inherent talent:

- 1.attentiveness, concentration, willingness for hard work;
- 2.speed of thought processes, systematic psych,
- 3.a high level of analysis and synthesis, high productivity of mental activity.

Talented person psychologically is ready to seek and adopt creative solutions, as well as adopt deep emotional and inspirational attitude to the work.

The highest expression of talent is genius. Genius is a person who because of his abilities recognized and achieved outstanding success in various aspects of human activity. Ideas, concepts, results of work of genius ahead of time, open up new horizons for humanity.

Genius is a high level of creative manifestation of personality, embodied in the work, has historical significance for society. Genius is a high degree of giftedness and talent. Genius is characterized by uniqueness, highest creativity. The genius is unique, not like other people sometimes so much that seem incomprehensible, even superfluous. Definitely to recognize someone genius is extremely difficult. That is why the “unrecognized genius” is much larger than they really are. However, geniuses are necessary to society. Geniuses are varied by their ability, talent, circumstances and activities.

13.4 Correlations of Abilities

Problems of diagnostics capabilities never lost its relevance. There are many unresolved issues, such as the problem of the creation of elite schools and other educational institutions for gifted children. Gifted young generations are a guarantee of a decent future for any country. But the main question is whether there are in science reliable objective criteria of giftedness. It should be noted that there are large-scale measurements of giftedness in modern scientific psychology.

¹⁰³ <http://www.dictionary.com/browse/genius>

The word “capable” or “incapable” is widely used in everyday life, especially in education practice. The concept of ability is controversial, contains a complicated universal, psychological, including the ethical and moral issues. This concept overlaps with many other psychological categories and events.

In modern schools have been developing tendency of early diagnosis of “special” abilities and aptitudes of students. Almost from the first year of study it is necessary to determine student’s ability for humanitarian or natural sciences. However, the most urgent issues pursued the modernization of education by profiling of schooling. Someone has allegedly proved that earlier a student chooses the profile of education, the better for him and for society. Someone thinks that the teenager is already able to make a correct choice of future profession, and though in most cases it is possible.

There are several correlations between personality traits and giftedness:

1) Child’s perception positively correlates with ability to see different sites of object;

2) Stable attention and thinking positively correlate with fluency, flexibility, originality and openness;

3) memory positively correlates with quick storing interesting information, but easy forgetting of what is considered to be of secondary importance;

4) Intelligence positively correlates with creativity, invention, etc.

Talent is the highest level of ability. Talented people are those who are highly gifted, sold in a particular field of human activity, those who have already achieved considerable success in the activities and fellowship. The high level of development of any particular ability is not talent.

Control questions:

1. Define main interactions between Dispositions and Abilities.
2. Explain how personality structure influence on Talent.
3. Identify how components of Pedagogical Activity influence on talent development.
4. Identify Components of Pedagogical Abilities.
5. Compare Talent and Genius.
6. Give examples on Giftedness.
7. Give examples on Talent development in learning processes.
8. Is it possible to identify Genius among children?
9. Define main differences between Talent and Giftedness.
10. Analyse Role of Ability in Activity.

CHAPTER 14. COMMUNICATION PSYCHOLOGY

14.1 Introduction to Communication Psychology

Communication is the process of interaction between people based on the exchange of information, mutual recognition and understanding of each other, forming relationships and joint activity.



Definition

Communication – the transference of understanding from one individual to another or the transfer of data from one source to another in any of a very large number of natural and artificial ways. The message or actual data being transferred in an act of communication¹⁰⁴.

According to I.P. Yakovlev, communication as a science should be understood scientific discipline of role of communication in society, its development and structure, processes and means of communication, and others.

According to S.V. Borisnev, communication is to be understood due to the social process of transferring and receiving information in terms of interpersonal and mass communication through different channels using different means of communication.

According to M.S. Andrianov, communication is to be understood as the semantic aspect of social interaction.

According to Niklas Luhmann, communication should be understood as a specific operation, which characterizes only social system.

Communication is studied by a number of sciences, in such fields as:

1. Ethnographic studies, domestic and cultural features of communication in different ethnic areas;
2. Psycholinguistics examines the factors contributing to transmission and perception of information in process of interpersonal and mass communication;
3. Linguistics deals with problems of verbal communication, which based on language and its grammar.
4. Paralinguistics deal with non-verbal communication such as gestures, facial expressions, and other nonverbal communication means.
5. Sociolinguistics examines the social nature of language and features of its functioning in different communities, mechanisms of interaction between social and linguistic factors that contribute to the contacts between representatives of the various groups;

¹⁰⁴ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 120

6. Sociology, where communication is studied as a social communication between representatives of different social groups.

The specifics of communication are as follows:

1. Communication requires a single communication space;

2. Participants of communication are active subjects of mutual information.

Each of them has own motives, goals and attitudes;

3. Understanding (misunderstanding) occurs in the communication process, which is achieved by the presence of feedback, as well as the importance of information;

4. Each communication partner during sharing information has to get meaning of information in order to get successful efficiency of communication;

5. Communicative impact is possible only under the condition when sender of information and receiver have a single or a similar system of codification and decoding. By other words, people need to speak the same language;

6. Participants of communication must identical understanding of communication situation;

7. During exchange of information may exist communication barriers

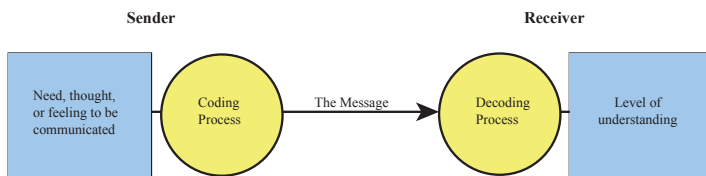


Figure 14.1 Main features of communication process

According to G. Andreeva there are three parts of communication:

Communicative aspect is connected with exchange process of information between individuals by language.

Interactive is the second aspect of communication is related not only with sharing words, but also with actions. A buyer and a seller may communicate without any words making payment at the store.

Perceptual is a third part of communication involves perception processes of partners each other during communication. For example, perceive information about not only partner's personality features but also his external image.

If considered of unity of these three parts, communication serves as a way of organizing joint activities and relationships between people.

A similar classification is proposed by B.F. Lomov:

1. Information-communicative is covering the processes of reception and transmission of information;

2. Regulatory and communicative part of communication associated with joint activities;

3. Affective-communicative part referring to emotional sphere of individuals during communication and meets needs to change their emotional state in order to get effective results of communication.

A.A. Brudnyi identifies main operating functions of communication:

◇ Instrumental function of communication is necessary for exchange information between partners of communication;

◇ Syndicated function serves to rallying groups of people;

◇ Translational function is necessary for transfer of knowledge between individuals;

Expression function is oriented to achieve mutual understanding.

According L.A. Karpenko there are 8 communication functions distinguishing by criterion of “the purpose of communication”:

1. Contact is a purpose of communication to establish mutual readiness to transmit and receive messages;

2. Information is purpose of communication to exchange of messages, information, opinions, ideas, solutions, etc.;

3. Motive is a purpose of communication to stimulate activity of communication partner, guide him to perform certain actions;

4. Coordination is a purpose of communication to coordinate individuals’ actions in joint activities;

5. Understanding is a purpose of communication to get adequate perception and understanding partners each other (their intentions, attitudes, feelings, states, etc.) and understanding meaning of the message;

6. Emotive is purpose of communication to exchange emotions as well as changes of them in order to understand partners of communication process each other;

7. Develop relations between individuals by awareness of each other roles, status, and other;

8. Influence is purpose of communication to change behavior, intentions, attitudes, opinions, solutions, ideas, and needs of partner of communication process.

14.2 Features of Effective Communication

Interpersonal skill and communication depend on effective communication and each person needs to learn ways of improving communication because it has many benefits.

Emotions, intentions, engaged listening are main psychological factors, which surround effective communication. Each person should understand someone’s communication message in order to gain effective communication.

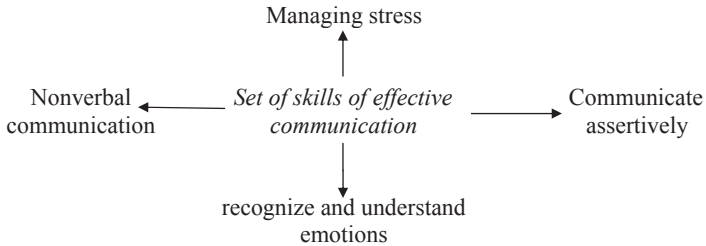


Figure 14.2.1 Managing stress

All these skills are developed by the person throughout life, and it seems to be challenging. Nevertheless, there are psychological recommendations that can help to improve effective communication:

1. Staying focused during communication;
2. Listening carefully others’ messages;
3. Understanding others’ opinion and explain own’s one in a clear way;
4. Skills help to resolve conflict.

Effective communication influence on every interaction in a positive way by learned skills.

Table 14.2 Barriers to effective communication

Barriers to effective communication		
Stress and out-of-control emotion	Inconsistent body language (for example, say “yes” while shaking head no)	Sending negative signals by negative body language (crossing arms, avoiding eye contact, tapping feet etc.)

Communicative competence is based on language, which is appropriately used. As Hymes D.H. observes communicative competence: “...a normal child acquires knowledge of sentences not only as grammatical, but also as appropriate. He or she acquires competence like when to speak, when not, and like what to talk about with whom, when, where, in what manner. In short, a child becomes able to accomplish a repertoire of speech acts, to take part in speech events, and to evaluate their accomplishment by others.”¹⁰⁵

¹⁰⁵ <https://linguisticator.com/communicative-competence/>

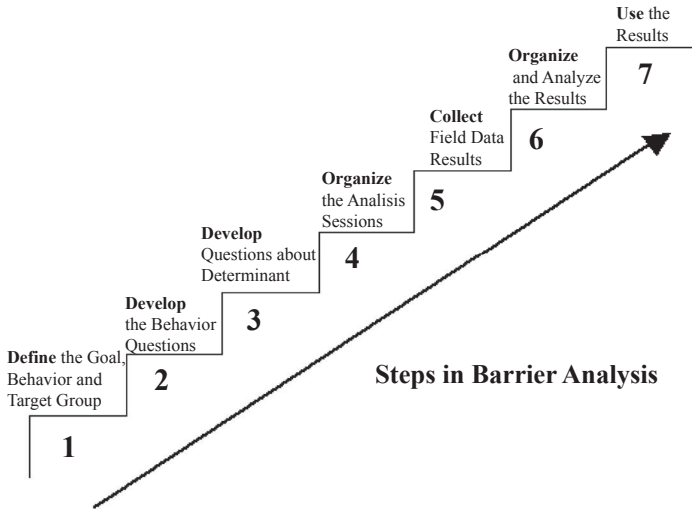


Figure 14.2.2 Communicative competence and its structure

Classification of communicative competence includes four components: linguistic, sociolinguistic, discourse, and strategic competence.

Linguistic competence is related with language grammar, vocabulary (phonetics, morphology, syntax, semantics).

1. Sociolinguistic competence consists from rules, taboos of language use in different culture.

2. Discourse competence deals with systemizing words, sentences in order to develop conversation.

3. Strategic competence is the knowledge about recognising and repairing communication breakdowns.

4. Each component of communicative competence develops in order to prevent communication from misunderstands.

There are several factors which influence on effective communication



cultures	organizations	personalities	communication skills
practices	cognitive style	communication preferences	specific social standing

Figure 14.2.3 Factors which influence on effective communication

According to the scheme, effective communication depends on:

1. Understanding and good interpretation of messages are related to culture. In this case people from different cultural background should avoid stereotypes, prejudice during communication.

2. Effective communication increases if people try to learn technical words or jargons that are used.

3. Personality traits such as openness, conscientiousness and extraversion can improve effective communication among people.

4. Communication skills such as communicate accurately and clearly need to develop in order to increase effective communication because they help in all aspects of life.

5. Practice any kind of communication skills for improve its features.

6. Cognitive style such as way of think, perceiving and remembering information also influence effective communication.

7. Ways of how individuals want to interact with others explain some features of communication preferences influencing on effective communication. For instance, which messages they prefer to receive.

8. Specific social standing as a given position in social environment also predicts effective communication. For example, social status, occupation, family role etc.

Thus, ability to communicate effectively should not be overlooked by individuals because communication skills can improve in order to raise quality of life.

14.3 Effective Communication and Current Technology

Advent technological devices develop various ways of communication. Such invention gives huge opportunities for the person to contact with others around the world:

1. Fiber optics and new satellites;

2. Digital cellular telephone;

3. Wireless devices;

4. Laptop or computers with modems;

5. Digital technology (images, audio, video);

6. E-mail.

New technologies help to communicate with others:

1. Changing the way of interaction and communication, which become easier and cheaper;

2. Keeping in touch with others free.

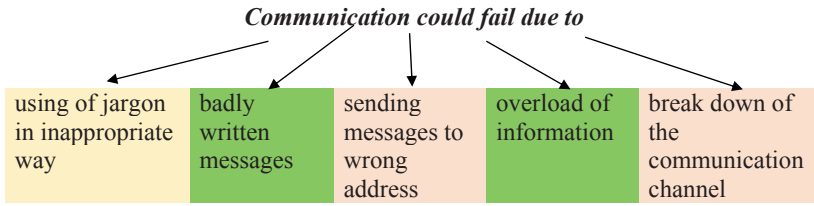


Figure 14.3.1 Communication could fail due to

Blocks to communication due to technologies:

1. The psyche can hold limited information at one time. So individuals can miss other things that are said.

2. In huge world of information developing by technologies, people do not catch everything that is said.

3. Difficulties of transferring information because of developing new terms, unusual words with different meaning in current language.

Psychological problems of communication due to technologies:

1. Isolation. Much electronic-relating relationship with others via the Internet develops a social isolation of individuals.

2. There are many communication conflicts because electronic technology poorly transmits emotions.

3. “Emotional invisibility” on the Internet as a social media abuse. People tend to delay communication with others (for example, not answering on emails).

4. Non-verbal communication destroys by technologies.

5. Imbalance of time on the Internet with time spent with people.

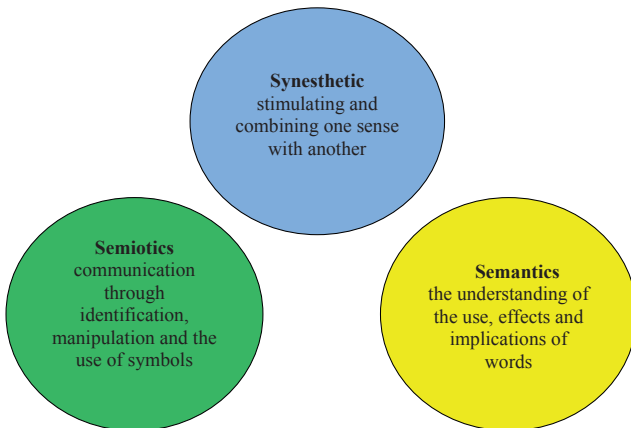


Figure 14.3.2 Luskin’s developed Three S Model

Media content such as music, sound and images reflect verbal and nonverbal communications. Luskin's developed Three S Model to explain how synesthetics, semiotics and semantics provide relationship between media, human communication, language and vocabulary.

Today technologies not only destroy some aspects of communication but also create current trends, which improve public understanding of major social and medical consequences (body weight, diet and lack of exercise, high cholesterol, and hypertension, etc.). Telemedicine, teletherapy and telehealth give a lot of opportunities for the person to communicate with public services.

Nowadays role and value of digital communication is still increasing because of business setting and other form of conversation moved to digital nature. Each communication technology gives many opportunities to get feedback from employees, customers in simple rapid way. Any communication in digital world also needs to improve and there are several tips in order to do this:

Use social media platforms such as Facebook, Twitter, LinkedIn, and Facebook as an excellent way to start any type of communication.

Use benefits of texting like SMS text messaging to improve not only writing communication skills but to give short correct responses during communication.

Keep balance between not only phone call and communication on a screen but also with real world interaction in order to support the ability to relate to people.

Web conference is another way to enable better communication regardless of physical location.

Video chats like Skype give many opportunities to save personal interrelationship in case when physically communication in some situations is impossible.

Thus, current communication technology gives another way of communication among people in digital world but still as any kind of communication, it requires its development in order to engage with people.

14.4 Culture and Communication

Intercultural communication is characterized by communication between people from different linguistic and cultural environment.

Effective intercultural communication is defined by three primary attributes of the person:

1. communication skills;
2. knowledge about culture;
3. attitudes about relationship.

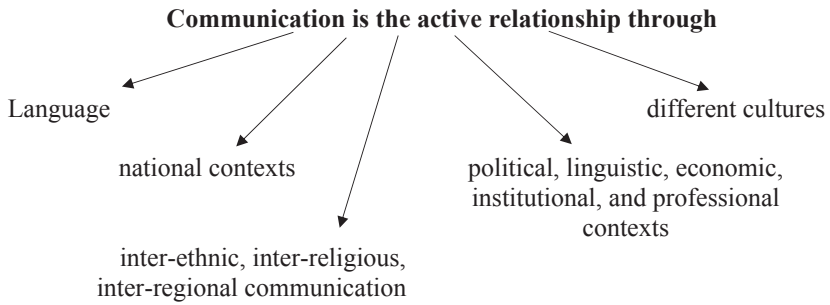


Figure 14.4 Intercultural communication

According theories of group identity there are two types of group identity:

1. *Ascribed identity* is the set of demographic and role descriptions that others in an interaction assume to hold true for you. Ascribed identity is often a function of one's physical appearance, ethnic connotations of one's name, or other stereotypical associations.

2. *Avowed identity* is comprised of the group affiliations that one feels most intensely. For example, if an individual is assimilated into a new culture, then the values and practices of that destination culture will figure importantly in her avowed culture. A related concept is reference group. A reference group is a social entity from which one draws one's avowed identity. It is a group in which one feels competent and at ease.¹⁰⁶

As stated by Communication theory of Identity (CtI) any cultural identities develop through interaction between groups of people from different cultures. Personal identity is shaped by language, nonverbal signs, etc.

Cultural identity performances can vary along three dimensions:

1. Scope of Identity Performance relates to features of persons' behavior, which express cultural aspects;

2. Intensity of Identity Performance is about power of persons' identity.

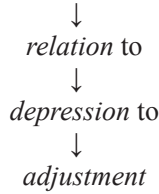
3. Salience of Identity Performance defines cultural aspects of identity, which demonstrates the person in his daily life (ethnic dress, language).¹⁰⁷

Individuals feel culture shock as a common stress reaction while immerse in an unfamiliar culture.

¹⁰⁶ <http://buscommteamthree.weebly.com/intercultural-communication.html>

¹⁰⁷ <http://buscommteamthree.weebly.com/intercultural-communication.html>

The pattern of adjusting to a new culture starts from



Culture shock can be as acculturation or adaptation for long-term sojourners such as immigrants, refugees. For them, there is to be no re-entry to their home cultures. Adjustment for this group of people could be only through communication in their new home culture.

Communication components of long-term sojourners need to be in balance between:

1. availability of same-culture community in foreign country;
2. the susceptibility of the local culture to long-term sojourners;
3. possibilities for long-term sojourners to communicate with.

The main goal of intercultural communication to solve adaptation problems in unfamiliar culture environment and establish bi-cultural (or multi-cultural) identity.

Intercultural communication usually is related with a message transmission problems because each individual interprets any message based on own cultural beliefs, expectations, stereotypes and values. In this situation, any message may be different between receiver and speaker. In order to develop effective cultural communication individuals need to improve not only their ability to understand information correctly but also have to communicate in the meaning of trust.

It is obvious that nonverbal communication as interaction without words differ among cross-cultural perspectives. In each culture, there are many variations of body language such as speech rhythms, posture, gestures, facial expressions, and eye contact. People should get knowledge about them in order to avoid causes for mistrust and misperception in cross-cultural communication.

Intercultural communication competence is supported by nonverbal behavior and individuals should improve this competence to communicate with host nationals. This competence is linked with personal identity. There are some components of intercultural communication competence, which helps people to be aware how to fix intercultural communication problems:

Context of intercultural competence may differ from culture to culture. In this case, individuals should mention this difference and try to learn cultural features in order to adapt to their environment.

Appropriateness of sojourners' behavior to any given culture.

Effectiveness of intercultural communication is related with desired outcome therefore individuals need to compare their goals of communication with its wishful results in order to control their behavior in foreign country.

Knowledge about persons' culture that individuals are interacting with for effective interpretation of message meanings and understand cultural specific context.

Motivations of intercultural communication lead to emotional reactions during cross-cultural interaction. So people should be aware about own intentions and motivation about each communication with host nationals.

In this case display of interest, being sensitive, empathy, interaction management, tolerance, open-mindedness, reflectiveness is main tools to improve intercultural communication.

Control questions:

1. Why advent of technology became an important tool of human communication?
2. How internet influences verbal and non-verbal communication?
3. Analyse a future of human communication.
4. Why intercultural communication became popular in nowadays?
5. What kinds of problems are developed due to intercultural communication?
6. How many stages are defined in stress reaction to unfamiliar culture?
7. Why group identity is important for each individual?
8. What kind of skills supports effective communication?
9. Why effective communications have some barriers?
10. How culture influences communication?

CHAPTER 15. PSYCHOLOGY OF CONFLICT

15.1 Introduction to Psychology of Conflict

The concept of “conflict” acts as a form of human relationship.

Definition

Conflict is a perceived incompatibility of actions, goals, or ideas¹⁰⁸.

Any conflict situation between people often is associated with aggression, negative emotions, arguments, threats, hostility, etc. There is an opinion that should be conflict always undesirable and should be avoided whenever possible, or immediately resolved. Modern psychology considers conflict has not only negative but positive part also. Robert M. and F. Tilman point to the current understanding of the conflict as a positive phenomenon because positive part of conflict consists with personality development and conceptualization of subjective situations.

W. Lincoln manifested the positive impact of the conflict because:

1. Conflict develops self-awareness;
2. Under conflict influence, it is approved and confirmed certain set of values;
3. It promotes group awareness;
4. Facilitate priority goals;
5. It plays the role of a safety valve for safe and even constructive outlet of emotions;
6. Conflict supports awareness about ways of situation’s understanding, recognition problems and ways of its resolution;
7. It leads to communication with other people and groups.

According W. Lincoln the negative impact of the conflict is:

1. It threatens social system;
2. It leads to loss of support;
3. Conflict leads to rapid action;
4. Conflict supports process of forming alliances and coalitions among people;
5. Conflict is seen as competition of interests etc.

J. Von Neumann and O. Morgenshteyn define the conflict as the interaction between two or more individuals with incompatible goals and different ways to achieve these goals.

¹⁰⁸ The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 127

K. Lewin describes a conflict as a situation in which simultaneously act several oppositely directed forces of individuals.

In Role Theory, conflict is related with situation of incompatible expectations (requirements) between two or more individual's social roles.

Theory of Social Conflict considered that conflict is a struggle over values.



Figure 15.1 Causes of conflict

15.2 Classification of Conflict

There is numerous classification of conflict. Conflicts can be implicit and explicit, intensive and worn, short-term and prolong, vertical and horizontal, etc.

In the direction of the conflicts they are divided into “horizontal” and “vertical” and “mixed”. In horizontal conflict, person involves in conflict relations with other individuals who are in a same social position with him. Vertical conflicts are characterized by conflict relations between individuals who stand in different social positions (for instance, between employee and manager). In mixed conflicts are presented vertical and horizontal components.

Conflicts also are divided into structural (constructive, positive) and destructive (destructive, negative) ones. Constructive conflict brings benefits for individuals, the second one only drawback.

Conflicts can be divided into objective and subjective classes due to its causes. First class is related with objective reasons, the second one

with subjective, personal reasons. Objective conflict often correlates with constructive solutions. In contrast, subjective conflict can generally be destructive.

M. Deutsch classifies conflicts according to the criterion of truth, falsehood or reality:

- True conflict is related with objective reflection of its reasons by individuals;
 - Conditional conflict depending on the circumstances, easily changeable, which, however, is not recognized by the parties;
 - Latent conflict is a conflict that would have happened, but it did not, because of reasons which are not recognized by individuals who are involved in conflict;
 - False conflict exists only because of the perception and understanding of errors in objective justification.
- Classification by type of social conflict formalization:
- formal
 - Informal.

These conflicts are usually associated with the organizational structure, its features, and can be both “horizontal” and “vertical”.

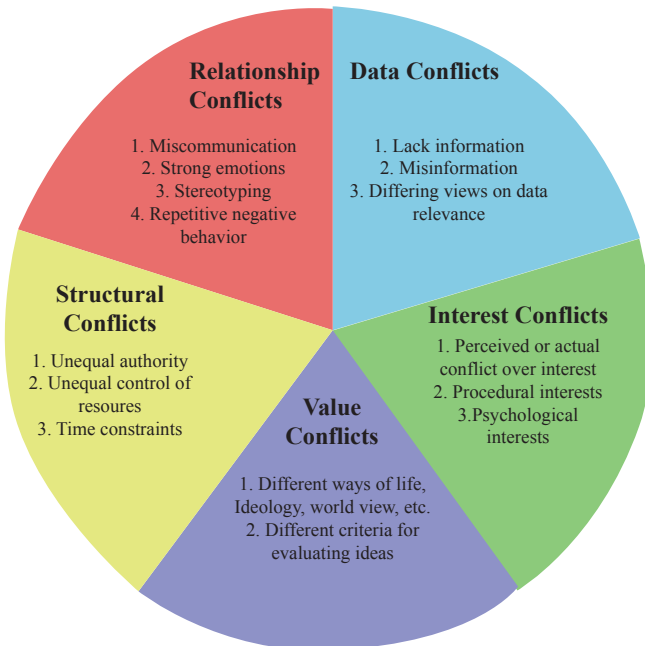


Figure 15.2.1 Classification of Conflict (adapted from C. Moore, 2003)

In terms of social interaction, conflicts are classified into intergroup, intra-group, interpersonal and intrapersonal one.

Intergroup conflict occurs between members of two or more different social groups. For example, such conflict could be between different departments of an organization. The socio-psychological studies have shown that “own” group in any situation looks better than “the other”. This phenomenon is so-called “group favouritism”. It is a source of intergroup tension and conflict. Main conclusion, which is made by social psychologists, is the following: if we want to remove the inter-group conflict, it is necessary to reduce the differences between the groups.

Intragroup conflict involves members of one group. Such conflict depends on group self-regulation. Group destruction may exist in case of low self-regulation processes. These may be general dissatisfaction, decrease of cooperation etc. For example, such conflict could be between employer and employee in an organization. Group is more resilient to conflict if it is cooperatively interrelated. The result of this cooperation is the freedom and openness to communication, mutual support, friendship and trust in relation. Therefore, the probability of intergroup conflict is higher in diffuse, immature groups.

Intrapersonal conflict is an inner conflict between individual’s motivation, feelings, needs, interests and behavior. Interpersonal conflict is the most frequently occurring conflict. The emergence of interpersonal conflicts is determined by personal characteristics, attitudes to situations and psychological characteristics of interpersonal relationships. The emergence and development of interpersonal conflict is largely due to the demographic and individual psychological characteristics. Women’s inner conflicts are related to personal problems, but men’s inner conflicts are related to their professional activities.

Intrapersonal conflict is connected with low self-criticism, impulsiveness, lack of restraint in feelings, negative prejudice, bias against others, aggressiveness, anxiety, low level of sociability, and others. As a social phenomenon, the conflict has a specific indicator function of well-being level in social groups that is related to positive (structural and functional) or negative (destructive, dysfunctional) features of conflict.

These types of functions are also very broad in its content. Among the positive features are best known:

1. Integration of group (team). People tend to become a group against external threats;

2. Balance of power and social control in order to get adequate social relationships and phenomena during conflict;

3. Structuring relationships between people because conflict can identify

ways and opportunities for cooperation, to adapt to new conditions of cooperation.

The negative features include:

1. Destruction of a favorable psychological climate in the group (team);
2. Reduction of interaction and cooperation between people;
3. Increase both physical and emotional costs;
4. Aggravation of confrontation between people involved in conflict
5. Increases tension of conflict situation;
6. Inadequate perception of the situation.

Conflicts arise as a result of various reasons:

1. General, “global” causes: socio-political and economic (the contradictions of people on the political and economic ideologies); socio-demographic (human contradictions related to gender, age, ethnic group); socio-psychological (connected with differences in various social groups); individual psychological (differences in personal characteristics).

2. Fledged reasons are as follows: any resources; interdependence (in any situation individual is dissatisfied with personal, business, emotional changes); difference of goals and objectives; values and beliefs (different people may come into antagonism); communication (conflict due to inadequate communication or non-constructive form of communication skills).

Conflicts are very diverse and broad; their classification can be represented also as follows:

1. Depending on the area where conflicts take place: family (between parents, children, and various relatives); organization (between work teams, managers, subordinates, co-workers); social (between different social groups and formations).

2. Sources of conflicts due to professional characteristics such as distribution of responsibilities or emotional characteristics of person.

3. Subjective perceiving of conflict.

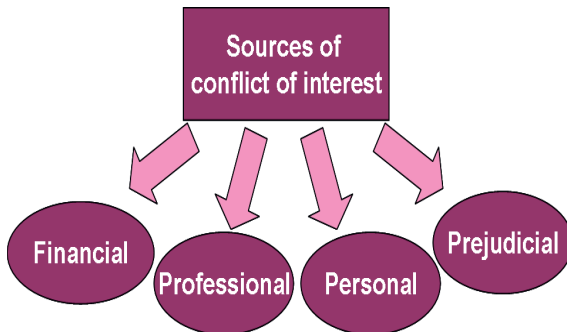


Figure 15.2.2 Classification of Conflict (adapted from C. Moore, 2003)

15.3 Stages of Conflict

There are several classifications of stages of conflict. One of them include 4 stages, other classifications include 5 stages. However, all of them describe the same process of a conflict.

Let's see 4 stage model of conflict:

The first stage.

The main controversy between individuals of relationship has already arisen, but still they are not recognized. Further controversy, even if it was hidden, becomes visible because initial participant of pre-conflict situation amplifies it.

The second stage

Participants get a clear understanding of conflict situation. There are appropriate emotions as a reaction to the situation. Individuals assessed conflict situation by understanding of reasons and causes of conflict. Participants analyze options for possible actions and decide how profitable to act (on their subjective view). Begin action.

Aspirations and actions of the participants may have two vectors:

- Avoid conflict, seek to get out of it and / or find a compromise solution, to prevent its further development;
- Intensify, exacerbate conflict dynamics and strengthen own goals.

It should be noted that the victory in the conflict often imaginary or temporary. Spent force and means, as well as modes of action may not be fit for purpose.

The third stage

There are external manifestations of conflict. Participants enter into open confrontation, acting in accordance with their intentions and decisions. Individuals of conflict situation try to block actions each other. If individuals of conflict situation agree to seek a compromise, the conflict tends to be resolved through negotiations (sometimes through a third party). The parties are willing to make concessions.

The fourth stage

Conflict is completed (this is not always allowed). Participants evaluated the effects of actions. The achieved result is compared with the original objectives. Depending on the analysis, exact conflict will be terminated or continue its developing (as with the new conflict passing through all the stages, of course, on another level).

It should be understood that the precise allocation of the conflict stages are conditionally. Each case requires a separate analysis.

For each stage (pre-conflict, the initial, active opposition, final) structural elements of conflict process are as follows:

- Parts (actors, members) of the conflict. All those who are directly or indirectly involved in the conflict interaction;
- Process conditions of conflict (rapid, silent or other);
- Subject of conflict;
- Outcomes of conflict.

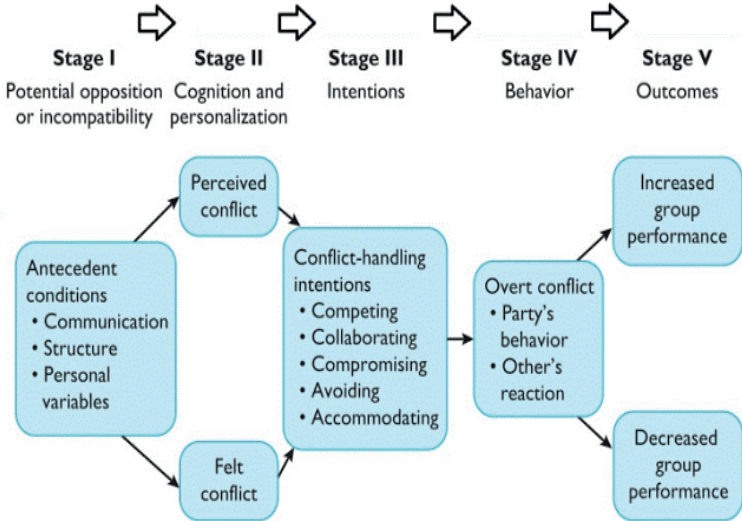


Figure 15.3 Five stage model of conflict¹⁰⁹

15.4 Conflict Behavior

In any conflict, each participant evaluates and correlates their interests with those of the opponent, by asking exact questions: What if I win? What if I lose? How important the subject of a conflict for me and for opponent? Based on this analysis, he chooses a particular strategy of behavior: competition, avoidance, accommodation, compromise or collaboration.

Competition. Who choose this strategy of behavior, primarily based on evaluation of personal interests in conflict as the highest, and the interests of his opponent as the lowest one.

Competition may be as a characteristic of destructive model. It will be effective in two cases. Firstly, in order to protect business interests from attacks or in case of existence of threat to the existence of the organization or team.

¹⁰⁹ <https://i1.wp.com/iedunote.com/img/conflict-process-5-stages-of-conflict.png?resize=640%2C389>

Avoidance. This strategy is characterized by a desire to escape the conflict. It is characterized by a low level of focus on personal interests as well as interests of an opponent.

Accommodation. In this strategy focus on personal interests are low and assessment of opponent's interests is high because of value of interpersonal relationships. Sometimes this strategy is reflected in tactics of decisive struggle for victory.

Compromise. The compromise strategy of behavior is characterized by balance of interests between conflicting participants. Compromise can not be considered as a way to resolve the conflict. Sometimes a compromise can exhaust the conflict situation. Compromise can be both in active and passive forms. The active form of compromise may emerge in the clear conclusion of contracts, acceptance of any obligation, etc. Passive compromise is vice versa.

Collaboration strategy is characterized by a high level of focus on own interests and interests of the opponent. This strategy is based not only on balance of interests, but also on recognition of values of interpersonal relationships. Cooperation is possible only in the case when each of participants of conflict allowing coexistence of opposing interests.

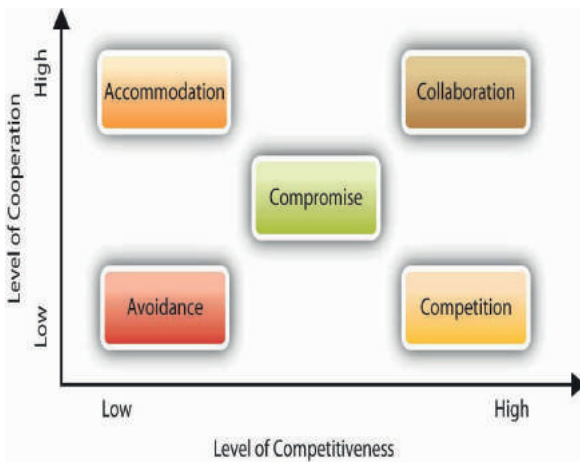


Figure 15.4 Conflict styles¹¹⁰

There is another classification of conflict patterns: approach-approach conflict, approach-avoidance conflict, avoidance-avoidance conflict and double approach-avoidance conflict.¹¹¹

¹¹⁰ https://saylordotorg.github.io/text_human-relations/section_13/554247525459b85a52c9b79285449287.jpg

¹¹¹ <http://online.sfsu.edu/psych200/unit10/101.htm>

***Approach-approach conflict* is a conflict in which we are forced to decide between two desirable alternatives, for example, choosing between two delicious desserts¹¹².**

Approach-avoidance conflict is a conflict in which we are attracted to the positive features of the alternative but are repelled by the negative features. For example, you want to go to the movies tonight, but that decision means you are not able to study for an upcoming exam. In this situation, there is often a wavering between the choices, and not until one's desire outweighs the other will the conflict be resolved.

Avoidance-avoidance conflict is a conflict in which we are forced to decide between two undesirable alternatives. For example, you can suffer a toothache or go to the dentist (assuming you are avoidant of dentists).

Double approach-avoidance conflict is an inner experience of indecision and anxiety when confronted with choice between two options, both of which have desirable and undesirable results.

15.5 Conflict Management

Conflict management methods. Each stage of conflict (pre-conflict, the initial, active opposition, final) will be characterized by its own specific ways of resolution (depending on the depth of contradictions).

1. In the pre-conflict stage, it is important to monitor closely the social structure, individuals' psychological relations and conditions of their violation. If people are not compatible, do not organize their joint activity. It is necessary to give information about understandable rules of engagement.

2. During active stage of conflict, it is necessary to analyze next:

1. Personal characteristics of each team representative; quality of personal interaction; relationships in the group, their specificity, leadership (formal and informal);

2. Group culture (traditions of team, uncoordinated positions of individuals).

3. In final stages of conflict interaction, it is possible to use:

4. The behavioral approach (formation of a sequence of rational and constructive acts of behavior);

5. The analytical approach (based on a detailed analysis of structural components of a conflict, conflict phases);

¹¹² The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 127

6.Situational approach (provides a solution to overcome the conflict, depending on the particular situation).

Control questions:

1. Define main psychological characteristics of conflict.
2. Is it possible to predict conflict in communication?
3. What kinds of strategies in conflict are more effective?
4. Why it is important to manage any conflict in human communication?
5. Why conflict strategies depend on psychological features of person?
6. How Conflict relationship influence on attention and perception?
7. Is it possible to cope totally with Conflict situations at schools?
8. Define Conflict behavior.
9. Compare Competition and Avoidance.
10. Give examples for Conflict Management.

TEST QUESTIONS OF THE SUBJECT “PSYCHOLOGY”

Question №1

This school of psychology analyzed the behavior as the object of their research

1. Activity Theory
2. Behaviorism
3. Psychoanalysis
4. Genetic Psychology
5. Gestalt Psychology
6. Cognitive Psychology

Question №2

This scientist has made the greatest contribution to the psychology development as an independent experimental science

1. William James
2. W. Wundt
3. Herbert Spencer
4. E. Thorndike
5. I.P. Pavlov

Question № 3

In this century, psychology became an independent and experimental science

1. XX century
2. XIX century
3. XVII century
4. XVI century
5. XVIII century
6. XV century
7. XXI century

Question № 4

Scientist who suggested the first experimental study of memory

1. Weber
2. Ebbinghaus
3. Fechner

4. Freud
5. Bekhterev
6. Watson
7. James

Question № 5

Very strong, rapidly emerging and rapidly flowing momentary emotional state is

1. Affect
2. Sleep
3. Smile
4. Activity
5. Behavior
6. Fear

Question № 6

The volume of short-term memory equal to

1. 5+/-2
2. 7+/-2
3. 3+/-3
4. 4+/-2
5. 6+/-2

Question № 7

Comprehension of emotional state of another person while communicating with him

1. Reflection
2. Memory
3. Expressivity
4. Emotion
5. Empathy

Question № 8

This process provides the direction and focus of mental activity

1. Memory
2. Attention
3. Performance

4. Thinking
5. Imagination
6. Feeling
7. Perception

Question № 9

This scholar introduced the concept of sensory system

1. I.M. Sechenov
2. P. Nemov
3. K. Teplov
4. I.P. Pavlov
5. L.S. Vygotsky

Question № 10

Scientist who suggested the concept of “reflex”

1. Wundt
2. Descartes
3. Nemov
4. Hippocrates
5. Spinoza

Question №11

Inherited form of behavior is called

1. Reflex
2. Instinct
3. Ability
4. Emotion
5. Skill

Question №12

Consciousness is

1. Ability to attention
2. Ability to adequately respond
3. Thinking form
4. Multifunctional subsystem
5. A set of sensory and mental images of the subject
6. The product of social and historical development

Question №13

Communication is divided into the following types:

1. Tangible
2. Verbal
3. Perfect
4. Business
5. Nonverbal

Question №14

Self-awareness is

1. Memory
2. Emotion
3. Thinking
4. Abilities
5. Self-reflection
6. Character

Question №15

Sensory processes include: sensation, perception, attention, representation, imagination, thinking, and

1. Emotions
2. Memory
3. Motivation
4. Fear
5. Behavior
6. Reflection

Question №16

The most informative facial expressions as emotional reactions are

1. Clothes
2. Eyes
3. Hand
4. Hairstyle
5. Nose
6. Ears

Question №17

Talent is

1. Optimism
2. Activity
3. The level of development of general abilities, which determines the range of activities in which people can achieve great success
4. Confidence
5. The speed of thought processes

Question №18

The highest form of creativity

1. Talent
2. Genius
3. Particular activity
4. Psychomotor and sensory organization
5. Person's performance
6. Special abilities

Question №19

Thinking relate with

1. Deprivation
2. Analysis
3. Behavior
4. Reduction
5. Synthesis
6. Activity
7. Determination

Question №20

Types of speech:

1. Sense
2. Oral
3. Written
4. Language
5. Emotion
6. Reflex

Question №21

Non-verbal components of communication:

1. Mouth
2. Hand
3. Gesture
4. Emotions
5. Speech

Question №22

Activity consist with

1. Reflex
2. Action
3. Non-verbal communication
4. Feel
5. Operations
6. Understanding

Question №23

Memory Processes include

1. Generalization
2. Fear
3. Forgetting
4. Experience
5. Concrete definition
6. Emotion

Question №24

The main types of human activities are

1. Communication
2. Work
3. Service
4. Speech
5. Language
6. Reflex
7. Game

Question №25

Type of sense

1. Perception
2. Memory
3. Burning
4. Pleasant
5. Happy
6. Fear
7. Salt

Question №26

Distant sensation is

1. Temperature
2. Visual
3. Tactile
4. Pain
5. Sense
6. Organic
7. Items
8. Stress

Question №27

Contact sensation is

1. Olfactory
2. Temperature
3. Tactile
4. Hearing
5. Visual
6. Stress
7. Emotional

Question №28

Types of sensation

1. Immediate
2. Reflex
3. Instant
4. Emotion

5. Short
6. Visual

Question №29

Human different from animal by following features:

1. Mentality
2. Consciousness
3. Memory
4. Perception
5. Neuron cells
6. Nervous system
7. Brain

Question №30

Thinking directly relate with

1. Speech
2. Consciousness
3. Self-concept
4. Talent
5. Character
6. Self-reflection

Question №31

Types of temperament are: choleric, ...

1. Pragmatist
2. Sanguine
3. Sensitive
4. Shopaholic
5. Hard worker

Question №32

Empirical methods in Psychology are:

1. Thinking
2. Experiment
3. Methods of mathematical statistics
4. Method
5. Observation

Question №33

Emotions reflect:

1. The world
2. Behavior
3. Connection between needs and results of the activity
4. Properties of objects
5. Sensation
6. Objective reality

Question №34

Due to stress person could get

1. Laughing
2. Somatic diseases
3. Game activity
4. Fatigue
5. New genes
6. Depression

Question №35

Scientists who studied the temperament:

1. Nemo
2. Hippocrates
3. Freud
4. Galen
5. I.P. Pavlov

Question №36

This science is the study of the psyche, including consciousness, perception, motivation, behavior, the biology of the nervous system in its relation to psyche

1. Physics
2. Math
3. Psychology
4. Physiology
5. Sociology
6. Philosophy

Question №37

Scientist who developed main requirement of experiment in science

1. William James
2. W. Wundt
3. Herbert Spencer
4. I. Newton
5. I.P. Pavlov

Question № 38

Scientist who suggested the principle of “Unity of Consciousness and Activity”

1. S.L. Rubinshtein
2. W. Wundt
3. Herbert Spencer
4. I. Newton
5. I.P. Pavlov

Question № 39

The Cultural-Historical Approach in Psychology was developed by

1. Weber
2. Ebbinghaus
3. Fechner
4. Vygotsky
5. Bekhterev
6. Watson
7. James

Question № 40

Theory of Joint Interactive Cognitive Activity was developed by

1. T. Tazhibayev
2. M.M. Mukanov
3. K.B. Zharikbaev
4. S.M. Dzhakupov

Question № 41

Psyche includes

1. Environment
2. Parents
3. Stimulus
4. Cognitive Processes
5. Response

Question № 42

Cognitive Processes, Communication, Personality relate with

1. Human activity
2. Animal behavior
3. Insect activity
4. Response
5. Empathy

Question № 43

Type of mental phenomena, which are studied by Psychology

1. Behavior
2. Animal behaviour
3. Activity
4. Mental Processes
5. Imagination
6. Feeling
7. Perception

Question № 44

The phenomenon of personal, subjective experience

1. Consciousness
2. Behavior
3. Imagination
4. Feeling
5. Perception

Question № 45

This an interdisciplinary approach to the study of the nervous system that includes anatomy, biochemistry, cognitive modeling, pharmacology, and physiology

1. Biology
2. Science
3. Neuroscience
4. Philosophy
5. Math

Question №46

This is any scientific approach which involves recording information without interference with the subject or process under scrutiny. This approach is often used in developmental psychology, ethology, and social psychology

1. Reflex
2. Method
3. Experiment
4. Observational method
5. Modelling

Question №47

An arrangement of conditions and procedures which allows observations of the relationships between the controlled circumstances (independent variables) and the uncontrolled outcomes (dependent variables) with an intent to make inferences about causal relationships between the independent and dependent variables

1. Reflex
2. Method
3. Experiment
4. Observational method
5. Modelling
6. Reflex

Question №48

According to A.N. Leontiev, psyche occurred through this stage during biological evolution:

1. Perceptive psyche
2. Behavior
3. Intellectual Psyche
4. Business
5. Activity

Question №49

Anything necessary for the survival of an organism is

1. Memory
2. Emotion
3. Need
4. Abilities
5. Self-reflection
6. Character

Question №50

Reasoning for doing something

1. Emotions
2. Memory
3. Motive
4. Fear
5. Behavior
6. Reflection

Correct answers

№	Correct answer
1	2
2	2
3	2
4	2
5	1
6	2
7	5
8	2
9	4
10	2
11	2
12	6
13	2, 5
14	2, 5
15	2
16	2
17	3
18	2
19	2, 5
20	2, 3
21	3
22	2, 5
23	3
24	2, 7

25	7
26	2
27	2, 3
28	6
29	2
30	1
31	2
32	2, 5
33	3
34	2, 5, 7
35	2, 5
36	3
37	4
38	1
39	4
40	4
41	4
42	1
43	4
44	1
45	3
46	4
47	3
48	1
49	3
50	3

GLOSSARY¹¹³

Abnormal psychology – the area of psychological investigation is concerned with understanding the nature of individual pathologies of mind, mood, and behavior.

Accommodation – according to Piaget, the process of restructuring or modifying cognitive structures so that new information can fit into them more easily; this process works in tandem with assimilation.

Acquisition – the stage in a classical conditioning experiment during which the conditioned response is first elicited by the conditioned stimulus.

Acute stress – a transient state of arousal with typically clear onset and offset patterns.

Aggression – behavior that cause psychological or physical harm to another individual.

Agoraphobia – an extreme fear of being in public places or open spaces from which escape may be difficult or embarrassing.

Altruism – prosocial behavior of a person who carries out it without considering his or her own safety or interests.

Ambiguity – a perceptual object that may have more than “one interpretation.

Amnesia – failure of memory caused by physical injury, disease, drug use, or psychological trauma.

Amygdala – the part of the limbic system that controls emotion, aggression, and the formation of emotional memory.

Analytic psychology – a branch of psychology that views the person as a constellation of compensatory internal forces in a dynamic balance.

Animal cognition – the cognitive capabilities of nonhuman animals; researchers trace the development of cognitive capabilities across species and the continuity of capabilities from nonhuman to human animals.

Anticipatory coping – efforts made in advance of a potentially stressful event to overcome, reduce, or tolerate the imbalance between perceived demands and available resources.

Anxiety – an intense emotional response caused by the preconscious recognition that a repressed conflict is about to emerge into consciousness.

Archetype – a universal, inherited, primitive, and symbolic representation of a particular experience or object.

Assimilation – according to Piaget, the process whereby new cognitive

¹¹³ Glossary of Psychological Terms. From G.R.J. & Ph.G. Zimbardo. Psychology and Life, 16 edition. Published by Allyn and Bacon, Boston, MA. Copyright (c) 2002 by Pearson Education

elements are fitted in with old elements or modified to fit more easily; this process works in tandem with accommodation.

Attachment – emotional relationship between a child and the “regular caregiver”.

Attention – a state of focused awareness on a subset of the available perceptual information.

Attitude – learned, relatively stable tendency to respond to people, concepts, and events in an evaluative way.

Attribution theory – a social-cognitive approach to describing the ways that the social perceiver uses information to generate causal explanations.

Attributions – judgments about the causes of outcomes.

Auditory cortex – the area of the temporal lobes that receives and processes auditory information.

Auditory nerve – the nerve that carries impulses from the cochlea to the cochlear nucleus of the brain.

Automatic processes – processes that do not require attention; they can often be performed along with other tasks without interference.

Autonomic nervous system (ANS) – the subdivision of the peripheral nervous system that controls the body’s involuntary motor responses by connecting the sensory receptors to the central nervous system (CNS) and the CNS to the smooth muscle, cardiac muscle, and glands.

Availability heuristic – judgment based on the information readily available in memory.

Behavior – the actions by which an organism adjusts to its environment.

Behavior analysis – the area of psychology that focuses on the environmental determinants of learning and behavior.

Behavior modification – the systematic use of principles of learning to increase the frequency of desired behaviors and/or decrease the frequency of problem behaviors.

Behavior therapy – see behavior modification.

Behavioral confirmation – the process by which people behave in ways that elicit from others specific expected reactions and then use those reactions to confirm their beliefs.

Behavioral data – observational reports about the behavior of organisms and the conditions under which the behavior occurs or changes.

Behavioral measures – overt actions and reactions that are observed and recorded, exclusive of self-reported behavior.

Behaviorism – a scientific approach that limits the study of psychology to measurable or observable behavior.

Behaviorist perspective – the psychological perspective primarily

concerned with observable behavior that can be objectively recorded and with the relationships of observable behavior to environmental stimuli.

Biofeedback – a self-regulatory technique by which an individual acquires voluntary control over nonconscious biological processes.

Biological constraints on learning any limitations on an organism's capacity to learn that are caused by the inherited sensory, response, or cognitive capabilities of members of a given species.

Biological perspective – the approach to identify causes of behavior that focuses on the functioning of the genes, the brain, the nervous system, and the endocrine system.

Biopsychosocial model – a model of health and illness that suggests that links among the nervous system, the immune system, behavioral styles, cognitive processing, and environmental factors can put people at risk for illness.

Body image – the subjective experience of the appearance of one's body.

Bottom-up processing – perceptual analyses based on the sensory data available in the environment; results of analyses are passed upward toward more abstract representations.

Brain stem – the brain structure that regulates the body's basic life processes.

Brightness – the dimension of color space that captures the intensity of light.

Broca's area – the region of the brain that translates thoughts into speech or sign.

Cannon-Bard theory of emotion – a theory stating that an “emotional stimulus produces two co-occurring reactions: arousal and experience of emotion that do not cause each other.”

Case study – intensive observation of a particular individual or small group of individuals.

Catharsis – the process of expressing strongly feeling but usually repressed emotions.

Central nervous system (CNS) – the part of the nervous system consisting of the brain and spinal cord.

Cerebral cortex – the outer surface of the cerebrum.

Cerebral hemispheres – the two halves of the cerebrum, connected by the corpus callosum.

Child-directed speech – a special form of speech with an exaggerated and high-pitched intonation that adults use to speak to infants and young children.

Chronic stress – a continuous state of arousal in which an individual perceives demands as greater than the inner and outer resources available for dealing with them.

Chronological age – the number of months or years since an individual's birth.

Classical conditioning – a type of learning in which a behavior (conditioned response) comes to be elicited by a stimulus (conditioned stimulus) that has acquired its power through an association with a biologically significant stimulus (unconditioned stimulus).

Client – the term used by clinicians who think of psychological disorders as problems in living, and not as mental illnesses, to describe those being treated.

Clinical psychologist – an individual who has earned a doctorate in psychology and whose training is in the assessment and treatment of psychological problems.

Cognition processes of knowing, including attending, remembering, and reasoning; also the content of the processes, such as concepts and memories.

Cognitive appraisal with respect to emotions, the process through which physiological arousal is interpreted with respect to circumstances in the particular setting in which it is being experienced; also, the recognition and evaluation of a stressor to assess the demand, the size of the threat, the resources available for dealing with it, and appropriate coping strategies.

Cognitive appraisal theory of emotion a theory stating that the experience of emotion is the joint effect of physiological arousal and cognitive appraisal, which serves to determine how an ambiguous inner state of arousal will be labeled.

Cognitive behavior modification – a therapeutic approach that combines the cognitive emphasis on the role of thoughts and attitudes influencing motivations and response with the behavioral emphasis on changing performance through modification of reinforcement contingencies.

Cognitive development – the development of processes of knowing, including imagining, perceiving, reasoning, and problem solving.

Cognitive dissonance – the theory that the tension-producing effects of incongruous cognitions motivate individuals to reduce such tension.

Cognitive map – a mental representation of physical space.

Cognitive perspective – the perspective on psychology that stresses human thought and the processes of knowing, such as attending, thinking, remembering, expecting, solving problems, fantasizing, and consciousness.

Cognitive processes higher mental processes, such as perception, memory, language, problem solving, and abstract thinking.

Cognitive psychology – the study of higher mental processes such as attention, language use, memory, perception, problem solving, and thinking.

Cognitive science – the interdisciplinary field of study of the approach systems and processes that manipulate information.

Cognitive therapy – a type of psychotherapeutic treatment that attempts to change feelings and behaviors by changing the way a client thinks about or perceives significant life experiences.

Collective unconscious – the part of an individual’s unconscious that is inherited, evolutionarily developed, and common to all members of the species.

Comorbidity – the experience of more than one disorder at the same time.

Complementary colors opposite each other on the color circle; when additively mixed, they create the sensation of white light.

Compliance – a change in behavior consistent with a communication source’s direct requests.

Concepts – mental representations of kinds or categories of items or ideas.

Conditioned reinforcers in classical conditioning, formerly neutral stimuli that have become reinforcers.

Conditioned response (CR) in classical conditioning, a response elicited by some previously neutral stimulus that occurs as a result of pairing the neutral stimulus with an unconditioned stimulus.

Conditioned stimulus (CS) in classical conditioning, a previously neutral stimulus that comes to elicit a conditioned response.

Conditioning – the ways in which events, stimuli, and behavior become associated with one another.

Cones photoreceptors concentrated in the center of the retina that are responsible for visual experience under normal viewing conditions and for all experiences of color.

Conformity – the tendency for people to adopt the behaviors, attitudes, and values of other members of a reference group.

Consciousness – a state of awareness of internal events and of the external environment.

Consensual validation – the mutual affirmation of conscious views of reality.

Conservation according to Piaget, the understanding that physical properties do not change when nothing is added or taken away, even though appearances may change.

Contact comfort – derived from an infant’s physical contact with the mother or caregiver.

Contact hypothesis – the idea that direct contact between hostile groups alone will reduce prejudice.

Context of discovery – the initial phase of research, in which observations, beliefs, information, and general knowledge lead to a new idea or a different way of thinking about some phenomenon.

Context of justification – the research phase in which evidence is brought to bear on hypotheses.

Contextual distinctiveness – the assumption that the serial position effect can be altered by the context and the distinctiveness of the experience being recalled.

Contingency management – a general treatment strategy involving changing behavior by modifying its consequences.

Control procedures consistent procedures for giving instructions, scoring responses, and holding all other variables constant except those being systematically varied.

Controlled processes that require attention; it is often difficult to carry out more than one controlled process at a time.

Convergence – the degree to which the eyes turn inward to fixate on an object.

Coping the process of dealing with internal or external demands that are perceived to be threatening or overwhelming.

Correlation coefficient (r) – a statistic that indicates the degree of relationship between two variables.

Counseling psychologist who specializes in providing guidance in areas such as vocational selection, school problems, drug abuse, and marital conflict.

Counter conditioning – a technique used in therapy to substitute a new response for a maladaptive one by means of conditioning procedures.

Creativity – the ability to generate ideas or products that are both novel and appropriate to the circumstances.

Criterion validity the degree to which test scores indicate a result on a specific measure that is consistent with some other criterion of the characteristic being assessed; also known as predictive validity.

Crystallized intelligence – the facet of intelligence involving the knowledge a person has already acquired and the ability to access that knowledge; measures by vocabulary, arithmetic, and general information tests.

Cultural perspective – the psychological perspective that focuses on cross-cultural differences in the causes and consequences of behavior.

Cutaneous senses – the skin senses that register sensations of pressure, warmth, and cold.

Dark adaptation – the gradual improvement of the eyes' sensitivity after a shift in illumination from light to near darkness.

Daytime sleepiness – the experience of excessive sleepiness during daytime activities; the major complaint of patients evaluated at sleep disorder centers.

Decision making – the process of choosing between alternatives; selecting or rejecting available options.

Declarative memory for information such as facts and events.

Deductive reasoning – a form of thinking in which one draws a conclusion that is intended to follow logically from two or more statements or premises.

Demand characteristics cues in an experimental setting that influence the participants' perception of what is expected of them and that systematically influence their behavior within that setting.

Dendrites – the branched fibers of neurons that receive incoming signals.

Dependent variable in an experimental setting, any variable whose values are the results of changes in one or more independent variables.

Descriptive statistics – statistical procedures that are used to summarize sets of scores with respect to central tendencies, variability, and correlations.

Determinism – the doctrine that all events-physical, behavioral, and mental-are determined by specific causal factors that are potentially knowable.

Developmental age – the chronological age at which most children show a particular level of physical or mental development.

Developmental psychology – the branch of psychology concerned with interaction between physical and psychological processes and with stages of growth from conception throughout the entire life span.

DNA (deoxyribonucleic acid) – the physical basis for the transmission of genetic information.

Double-blind control – an experimental technique in which biased expectations of experimenters are eliminated by keeping both participants and experimental assistants unaware of which participants have received which treatment.

Dream analysis – the psychoanalytic interpretation of dreams used to gain insight into a person's unconscious motives or conflicts.

Dream work in Freudian dream analysis, the process by which the internal censor transforms the latent content of a dream into manifest content.

Drives internal states that arise in response to a disequilibrium in an animal's physiological needs.

Echoic memory sensory memory that allows auditory information to be stored for brief durations.

Ego – the aspect of personality involved in self-preservation activities and in directing instinctual drives and urges into appropriate channels.

Ego defense mechanisms mental strategies (conscious or unconscious) used by the ego to defend itself against conflicts experienced in the normal course of life.

Egocentrism In cognitive development, the inability of a young child at the preoperational stage to take the perspective of another person.

Electroencephalogram (EEG) – a recording of the electrical activity of the brain.

Emotion – a complex pattern of changes, including physiological arousal, feelings, cognitive processes, and behavioral reactions, made in response to a situation perceived to be personally significant.

Emotional intelligence type of intelligence defined as the abilities to perceive, appraise, and express emotions accurately and appropriately, to use emotions to facilitate thinking, to understand and analyze emotions, to use emotional knowledge effectively, and to regulate one's emotions to promote both emotional and intellectual growth.

Encoding the process by which a mental representation is formed in memory.

Encoding specificity – the principle that subsequent retrieval of information is enhanced if cues received at the time of recall are consistent with those present at the time of encoding.

Environmental variables external influences on behavior.

Episodic memories long-term memories for autobiographical events and the contexts in which they occurred.

EQ – the emotional intelligence counterpart of IQ.

Equity theory – a cognitive theory of work motivation that proposes that workers are motivated to maintain fair and equitable relationships with other relevant persons; also, a model that postulates that equitable relationships are those in which the participants' outcomes are proportional to their inputs.

Erogenous zones areas of the skin surface that are especially sensitive to stimulation and that give rise to erotic or sexual sensations.

Evolutionary perspective – the approach to psychology that stresses the importance of behavioral and mental adaptiveness, based on the assumption that mental capabilities evolved over millions of years to serve particular adaptive purposes.

Expectancy theory – a cognitive theory of work motivation that proposes that workers are motivated when they expect their efforts and job performance to result in desired outcomes.

Experimental methods research methodologies that involve the manipulation of independent variables in order to determine their effects on the dependent variables.

Explicit uses of memory conscious efforts to recover information through memory processes.

Extinction in conditioning, the weakening of a conditioned association in the absence of a reinforcer or unconditioned stimulus.

Face validity – the degree to which test items appear to be directly related to the attribute the researcher wishes to measure.

Fear – a rational reaction to an objectively identified external danger that may induce a person to flee or attack in self-defense.

Fight-or-flight response – a sequence of internal activities triggered when an organism is faced with a threat; prepares the body for combat and struggle

or for running away to safety; recent evidence suggests that the response is characteristic only of males.

Figure object-like regions of the visual field that are distinguished from background.

Five-factor model – a comprehensive descriptive personality system that maps out the relationships among common traits, theoretical concepts, and personality scales; informally called the Big Five.

Fixation – a state in which a person remains attached to objects or activities more appropriate for an earlier stage of psychosexual development.

Fluid intelligence – the aspect of intelligence that involves the ability to see complex relationships and solve problems.

Formal assessment – the systematic procedures and measurement instruments used by trained professionals to assess an individual's functioning, aptitudes, abilities, or mental states.

Foundational theories – frameworks for initial understanding formulated by children to explain their experiences of the world.

Free association – the therapeutic method in which a patient gives a running account of thoughts, wishes, physical sensations, and mental images as they occur.

Frontal lobe region of the brain located above the lateral fissure and in front of the central sulcus; involved in motor control and cognitive activities.

Frustration-aggression hypothesis according to this hypothesis, frustration occurs in situations in which people are prevented or blocked from attaining their goals; a rise in frustration then leads to a greater probability of aggression.

Functional MRI (fMRI) – a brain imaging technique that combines benefits of both MRI and PET scans by detecting magnetic changes in the flow of blood to cells in the brain.

Functionalism – the perspective on mind and behavior that focuses on the examination of their functions in an organism's interactions with the environment.

Ganglion cells in the visual system that integrate impulses from many bipolar cells in a single firing rate.

Gender – a psychological phenomenon that refers to learned sex-related behaviors and attitudes of males and females.

Gender identity one's sense of maleness or femaleness; usually includes awareness and acceptance of one's biological sex.

Gender roles sets of behaviors and attitudes associated by society with being male or female and expressed publicly by the individual.

General adaption syndrome (GAS) – the pattern of nonspecific adaptational physiological

Genes – the biological units of heredity; discrete sections of chromosomes responsible for transmission of traits.

Genetics – the study of the inheritance of physical and psychological traits from ancestors.

Genotype – the genetic structure an organism inherits from its parents.

Gestalt psychology – a school of psychology that maintains that psychological phenomena can be understood only when viewed as organized, structured wholes, not when broken down into primitive perceptual elements.

Gestalt therapy therapy that focuses on ways to unite mind and body to make a person whole.

Glia – the cells that hold neurons together and facilitate neural transmission, remove damaged and dead neurons, and prevent poisonous substances in the blood from reaching the brain.

Goal-directed selection – a determinant of why people select some parts of sensory input for further processing; it reflects the choices made as a function of one's own goals.

Group dynamics – the study of how group processes change individual functioning.

Group polarization the tendency for groups to make decisions that are more extreme than the decisions that would be made by the members acting alone.

Groupthink – the tendency of a decision-making group to filter out undesirable input so that a consensus may be reached, especially if it is in line with the leader's viewpoint.

Hallucinations false perceptions that occur in the absence of objective stimulation.

Health – a general condition of soundness and vigor of body and mind; not simply the absence of illness or injury.

Health promotion – the development and implementation of general strategies and specific tactics to eliminate or reduce the risk that people will become ill.

Health psychology – the field of psychology devoted to understanding the ways people stay healthy, the reasons they become ill, and the ways they respond when they become ill.

Hierarchy of needs Maslow's view that basic human motives form a hierarchy and that the needs at each level of the hierarchy must be satisfied before the next level can be achieved; these needs progress from basic biological needs to the need for transcendence.

Hippocampus – the part of the limbic system that is involved in the acquisition of explicit memory.

Homeostasis constancy or equilibrium of the internal conditions of the body.

Hormones – the chemical messengers, manufactured and secreted by the endocrine glands, that regulate metabolism and influence body growth, mood, and sexual characteristics.

Human behavior genetics – the area of study that evaluates the genetic component of individual differences in behaviors and traits.

Human-potential movement – the therapy movement that encompasses all those practices and methods that release the potential of the average human being for greater levels of performance and greater richness of experience.

Humanistic perspective – a psychological model that emphasizes an individual's phenomenal world and inherent capacity for making rational choices and developing to maximum potential.

Hypnosis – an altered state of awareness characterized by deep relaxation, susceptibility to suggestions, and changes in perception, memory, motivation, and self-control.

Hypnotizability – the degree to which an individual is responsive to standardized hypnotic suggestion.

Hypothalamus – the brain structure that regulates motivated behavior (such as eating and drinking) and homeostasis.

Hypothesis – a tentative and testable explanation of the relationship between two (or more) events or variables; often stated as a prediction that a certain outcome will result from specific conditions.

Iconic memory sensory memory in the visual domain; allows large amounts of information to be stored for very brief durations.

Id – the primitive, unconscious part of the personality that operates irrationally and acts on impulse to pursue pleasure.

Identification and recognition two ways of attaching meaning to percepts.

Illusion an experience of a stimulus pattern in a manner that is demonstrably incorrect but shared by others in the same perceptual environment.

Illusory contours contours perceived in a figure when no contours are physically present.

Implicit uses of memory availability of information through memory processes without the exertion of any conscious effort to encode or recover information.

Implosion therapy – a behavioral therapeutic technique that exposes a client to anxiety-provoking stimuli, through his or her own imagination, in an attempt to extinguish the anxiety associated with the stimuli.

Imprinting – a primitive form of learning in which some infant animals physically follow and form an attachment to the first moving object they see and/or hear.

Impulsive aggression emotion-driven aggression produced in reaction to situations in the “heat of the moment.”

Independent construals of self conceptualization of the self as an individual whose behavior is organized primarily by reference to one’s own thoughts, feelings, and actions, rather than by reference to the thoughts, feelings, and actions of others.

Independent variable in experimental settings, the stimulus condition whose values are free to vary independently of any other variable in the situation.

Induced motion an illusion in which a stationary point of light within a moving reference frame is seen as moving and the reference frame is perceived as stationary.

Inductive reasoning a form of reasoning in which a conclusion is made about the probability of some state of affairs, based on the available evidence and past experience.

Inferences missing information filled in on the basis of a sample of evidence or on the basis of prior beliefs and theories.

Inhibitory inputs information entering a neuron signaling it not to fire.

Instincts preprogrammed tendencies that are essential to a species’s survival.

Instrumental aggression cognition-based and goal-directed aggression carried out with premeditated thought, to achieve specific aims.

Intelligence – the global capacity to profit from experience and to go beyond given information about the environment.

Interference – a memory phenomenon that occurs when retrieval cues do not point effectively to one specific memory.

Internalization according to Vygotsky, the process through which children absorb knowledge from the social context.

Intimacy – the capacity to make a full commitment — sexual, emotional, and moral — to another person.

James-Lange theory of emotion – a peripheral-feedback theory of emotion stating that an eliciting stimulus triggers a behavioral response that sends different sensory and motor feedback to the brain and creates the feeling of a specific emotion.

Job burnout – the syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment, often experienced by workers in high-stress jobs.

Judgment – the process by which people form opinions, reach conclusions, and make critical evaluations of events and people based on available material; also, the product of that mental activity.

Kinesthetic sense concerned with bodily position and movement of the body parts relative to each other.

Language-making capacity – the innate guidelines or operating principles that children bring to the task of learning a language.

Language production – what people say, sign, and write, as well as the processes they go through to produce these messages.

Latent content in Freudian dream analysis, the hidden meaning of a dream.

Learned helplessness – a general pattern of nonresponding in the presence of noxious stimuli that often follows after an organism has previously experienced noncontingent, inescapable aversive stimuli.

Learning – a process based on experience that results in a relatively permanent change in behavior or behavioral potential.

Learning-performance distinction – the difference between what has been learned and what is expressed in overt behavior.

Levels-of-processing theory – a theory that suggests that the deeper the level at which information was processed, the more likely it is to be retained in memory.

Libido – the psychic energy that drives individuals toward sensual pleasures of all types, especially sexual ones.

Limbic system – the region of the brain that regulates emotional behavior, basic motivational urges, and memory, as well as major physiological functions.

Longitudinal design – a research design in which the same participants are observed repeatedly, sometimes over many years.

Long-term memory (LTM) – memory processes associated with the preservation of information for retrieval at any later time.

Loudness – a perceptual dimension of sound influenced by the amplitude of a sound wave; sound waves with large amplitudes are generally experienced as loud and those with small amplitudes as soft.

Lucid dreaming – the theory that conscious awareness of dreaming is a learnable skill that enables dreamers to control the direction and content of their dreams.

Magnetic resonance imaging (MRI) – a technique for brain imaging that scans the brain using magnetic fields and radio waves.

Meditation – a form of consciousness alteration designed to enhance self-knowledge and well-being through reduced self-awareness.

Memory – the mental capacity to encode, store, and retrieve information.

Mental age in Binet's measure of intelligence, the age at which a child is performing intellectually, expressed in terms of the average "age at which normal children achieve a particular score.

Mental retardation condition in which individuals have IQ scores 70 to

75 or below and also demonstrate limitations in the ability to bring adaptive skills to bear on life tasks.

Mental set – the tendency to respond to a new problem in the manner used to respond to a previous problem.

Meta-analysis – a statistical technique for evaluating hypotheses by providing a formal mechanism for detecting the general conclusions found in data from many different experiments.

Metamemory implicit or explicit knowledge about memory abilities and effective memory strategies; cognition about memory.

Mind-body problem – the difficulty in understanding how the mind and body influence each other – so that physical events can cause mental events, and so that mental events can cause physical ones.

Mnemonics strategies or devices that use familiar information during the encoding of new information to enhance subsequent access to the information in memory.

Mood disorder – a mood disturbance such as severe depression or depression alternating with mania.

Morality – a system of beliefs and values that ensures that individuals will keep their obligations to others in society and will behave in ways that do not interfere with the rights and interests of others.

Monocular depth cues features of the visual stimulus that indicate distance even if the stimulus is viewed with only one eye.

Monogamy – a mating pattern in which one male and one female form an enduring reproductive partnership.

Monozygotic (MZ) twins – that develop from a single fertilized egg that then splits in half. These twins are genetically identical. *See also* dizygotic (DZ) twins.

Mood disorders – a group of disorders distinguished primarily by changes in positive and negative affective state.

Mood stabilizers medications that treat bipolar disorder, such as lithium.

Moods affective responses that are typically longer-lasting than emotions, and less likely to have a specific object.

Morbid obesity – the level of obesity at which someone's health is genuinely at risk, usually defined as a BMI over 40.

Morpheme – the smallest significant unit of meaning in a word (e.g., the word *boys* has two morphemes, *boy* and *-s*).

Motion detectors cells in the visual cortex that are sensitive to an image moving in a particular direction across the retina.

Motion parallax – a depth cue based on the fact that, as an observer moves, the retinal images of nearby objects move more rapidly than do the retinal images of objects farther away.

Motivated social cognition thinking about the social world in ways that serve an emotional need, such as when people hold beliefs that help them feel less anxious.

Motivational-enhancement therapy – a brief, nonconfrontational, client-centered therapy designed to change specific problematic behaviors such as alcohol or drug use.

Motivation – the process of starting, directing, and maintaining physical and psychological activities; includes mechanisms involved in preferences for one activity over another and the vigor and persistence of responses.

Motor cortex – the region of the cerebral cortex that controls the action of the body's voluntary muscles.

Motor neurons – the neurons that carry messages away from the central nervous system toward the muscles and glands.

Need for achievement (n Ach) an assumed basic human need to strive for achievement of goals that motivates a wide range of behavior and thinking.

Neuron – a cell in the nervous system specialized to receive, process, and/or transmit information to other cells.

Neuroscience – the scientific study of the brain and of the links between brain activity and behavior.

Neurotransmitters chemical messengers released from neurons that cross the synapse from one neuron to another, stimulating the postsynaptic neuron.

Nonconscious information not typically available to consciousness or memory.

Non-REM (NREM) sleep – the period during which a sleeper does not show rapid eye movement; characterized by less dream activity than REM sleep.

Norm crystallization – the convergence of the expectations of a group of individuals into a common perspective as they talk and carry out activities together.

Normal curve – the symmetrical curve that represents the distribution of scores on many psychological attributes; allows researchers to make judgments of how unusual an observation or result is.

Normative influence group effects that arise from individuals' desire to be liked, accepted, and approved of by others.

Norms standards based on measurements of a large group of people; used for comparing the scores of an individual with those of others within a well-defined group.

Object permanence – the recognition that objects exist independently of an individual's action or awareness; an important cognitive acquisition of infancy.

Object relations theory psychoanalytic theory that originated with Melanie Klein's view that the building blocks of how people experience the world emerge from their relations to loved and hated objects (significant people in their lives).

Observational learning – the process of learning new responses by watching the behavior of another.

Observer bias – the distortion of evidence because of the personal motives and expectations of the viewer.

Occipital lobe – rearmost region of the brain; contains primary visual cortex.

Operant – behavior emitted by an organism that can be characterized in terms of the observable effects it has on the environment.

Operant conditioning learning in which the probability of a response is changed by a change in its consequences.

Operant extinction when a behavior no longer produces predictable consequences, its return to the level of occurrence it had before operant conditioning.

Operational definition – a definition of a variable or condition in terms of the specific operation or procedure used to determine its presence.

Opponent-process theory – the theory that all color experiences arise from three systems, each of which includes two “opponent” elements (red versus green, blue versus yellow, and black versus white).

Optic nerve – the axons of the ganglion cells that carry information from the eye toward the brain.

Organismic variables – the inner determinants of an organism's behavior.

Organizational psychologists – psychologists who study various aspects of the human work environment, such as communication among employees, socialization or enculturation of workers, leadership, job satisfaction, stress and burnout, and overall quality of life.

Orientation constancy – the ability to perceive the actual orientation of objects in the real world despite their varying orientation in the retinal image.

Out-groups the groups with which people do not identify.

Overregularization – a grammatical error, usually appearing during early language development, in which rules of the language are applied too widely, resulting in incorrect linguistic forms.

Pain – the body's response to noxious stimuli that are intense enough to cause, or threaten to cause, tissue damage.

Panic disorder an anxiety disorder in which sufferers experience unexpected, severe panic attacks that begin with a feeling of intense apprehension, fear, or terror.

Parenting styles – the manner in which parents rear their children;

an authoritative parenting style, which balances demandingness and responsiveness, is seen as the most effective.

Peace psychology an interdisciplinary approach to the prevention of nuclear war and the maintenance of peace.

Perceived control – the belief that one has the ability to make a difference in the course or the consequences of some event or experience; often helpful in dealing with stressors.

Perception – the processes that organize information in the sensory image and interpret it as having been produced by properties of objects or events in the external, three-dimensional world.

Perceptual constancy – the ability to retain an unchanging percept of an object despite variations in the retinal image.

Perceptual organization – the processes that put sensory information together to give the perception of a coherent scene over the whole visual field.

Perceptual constancy – the accurate perception of certain attributes of a distal object, such as its shape, size, and brightness, despite changes in the proximal stimulus by variations in our viewing circumstances.

Perceptual sensitivity an organism's ability to detect a signal.

Performance orientation – a learning orientation characterized by a focus on presenting oneself well and appearing intelligent to others.

Peripheral nervous system (PNS) – the part of the nervous system composed of the spinal and cranial nerves that connect the body's sensory receptors to the CNS and the CNS to the muscles and glands.

Personality – the unique psychological qualities of an individual that influence a variety of characteristic behavior patterns (both overt and covert) across different situations and over time.

Personality disorder – a chronic, inflexible, maladaptive pattern of perceiving, thinking, and behaving that seriously impairs an individual's ability to function in social or other settings.

Personality inventory – a self-report questionnaire used for personality assessment that includes a series of items about personal thoughts, feelings, and behaviors.

Personality types distinct patterns of personality characteristics used to assign people to categories; qualitative differences, rather than differences in degree, used to discriminate among people.

Phenotype – the observable characteristics of an organism, resulting from the interaction between the organism's genotype and its environment.

Phi phenomenon – the simplest form of apparent motion, the movement illusion in which one or more stationary lights going on and off in succession are perceived as a single moving light.

Phobia – a persistent and irrational fear of a specific object, activity, or situation that is excessive and unreasonable, given the reality of the threat.

Photoreceptors receptor cells in the retina that are sensitive to light.

Physical development – the bodily changes, maturation, and growth that occur in an organism starting with conception and continuing across the life span.

Physiological dependence – the process by which the body becomes adjusted to and dependent on a drug.

Place theory – the theory that different frequency tones produce maximum activation at different locations along the basilar membrane, with the result that pitch can be coded by the place at which activation occurs.

Placebo control an experimental condition in which treatment is not administered; it is used in cases where a placebo effect might occur.

Placebo effect – a change in behavior in the absence of an experimental manipulation.

Placebo therapy – a therapy independent of any specific clinical procedures that results in client improvement.

Population – the entire set of individuals to which generalizations will be made based on an experimental sample.

Positive punishment – a behavior is followed by the presentation of an aversive stimulus, decreasing the probability of that behavior.

Positive reinforcement – a behavior is followed by the presentation of an appetitive stimulus, increasing the probability of that behavior.

Possible selves – the ideal selves that a person would like to become, the selves a person could become, and the selves a person is afraid of becoming; components of the cognitive sense of self.

Posttraumatic stress disorder (PTSD) – an anxiety disorder characterized by the persistent reexperience of traumatic events through distressing recollections, dreams, hallucinations, or dissociative flashbacks; develops in response to rapes, life-threatening events, severe injuries, and natural disasters.

Preattentive processing – processing of sensory information that precedes attention to specific objects.

Preconscious memories – memories that are not currently conscious but that can easily be called into consciousness when necessary.

Predictive validity see criterion validity.

Prejudice – a learned attitude toward a target object, involving negative affect (dislike or fear), negative beliefs (stereotypes) that justify the attitude, and a behavioral intention to avoid, control, dominate, or eliminate the target object.

Primacy effect improved memory for items at the start of a list.

Primary reinforcers biologically determined reinforcers such as food and water.

Priming in the assessment of implicit memory, the advantage conferred by prior exposure to a word or situation.

Problem solving thinking that is directed toward solving specific problems and that moves from an initial state to a goal state by means of a set of mental operations.

Procedural memory – memory for how things get done; the way perceptual, cognitive, and motor skills are acquired, retained, and used.

Projective test – a method of personality assessment in which an individual is presented with a standardized set of ambiguous, abstract stimuli and asked to interpret their meanings; the individual's responses are assumed to reveal inner feelings, motives, and conflicts.

Prosocial behaviors – behaviors that are carried out with the goal of helping other people.

Prototype the most representative example of a category.

Prototype theory – a theory in which concepts and word meanings are formed around average or typical values. Some prototype theories comprise feature representations, but without the necessary and sufficient conditions of definitional theory, but some are exemplar representations. In both cases, centrality in the category is measured by closeness to an ideal or average. *See also* prototype.

Proximal stimulus – the energies from the outside world that directly reach our sense organs. *See also* distal stimulus.

Proximate cause – the influences within an organism's lifetime that led to its particular traits or behaviors.

Proximity in perception, the closeness of two figures. The closer together they are, the more we tend to group them together perceptually.

Psychoanalysis – a theory of human personality development formulated by Freud, based on assertions about unconscious conflict and early psychosexual development; also the method of therapy that draws heavily on this theory. The form of psychodynamic therapy developed by Freud; an intensive and prolonged technique for exploring unconscious motivations and conflicts in neurotic, anxiety-ridden individuals.

Psychoanalyst an individual who has earned either a Ph.D. or an M.D. degree and has completed postgraduate training in the Freudian approach to understanding and treating mental disorders.

Psychobiography – the use of psychological (especially personality) theory to describe and explain an individual's course through life.

Psychodynamic approaches – approaches to personality and/or therapy

that are derived from psychoanalytic theory, which asserts that clinical symptoms arise from unconscious conflicts rooted in childhood.

Psychogenic hypothesis – the hypothesis that mental disorders result from psychological causes.

Psychodynamic personality theories – theories of personality that share the assumption that personality is shaped by and behavior is motivated by powerful inner forces.

Psychodynamic perspective – a psychological model in which behavior is explained in terms of past experiences and motivational forces; actions are viewed as stemming from inherited instincts, biological drives, and attempts to resolve conflicts between personal needs and social requirements.

Psychological assessment – the use of specified procedures to evaluate the abilities, behaviors, and personal qualities of people.

Psychogenic symptoms – symptoms believed to result from some psychological cause rather than from tissue damage.

Psychological intensity – the magnitude of a stimulus as it is perceived, rather than in terms of its physical attributes.

Psychometric approach to intelligence an attempt to understand the nature of intelligence by studying the pattern of results obtained on intelligence tests.

Psychopathology – the study of mental disorders, or a term for the mental disorder itself.

Psychopathy – *see* antisocial personality disorder.

Psychophysics an approach to perception that relates the characteristics of physical stimuli to the sensory experiences they produce.

Psychosis loss of contact with reality, most often evidenced as delusions or hallucinations.

Psychosurgery neurosurgery performed to alleviate manifestations of mental disorders that cannot be alleviated using psychotherapy, medication, or other standard treatments.

Psychotropic drugs medications that control, or at least moderate, the manifestations of some mental disorders.

Proximal stimulus – the optical image on the retina; contrasted with the distal stimulus, the physical object in the world.

Psychological dependence – the psychological need or craving for a drug.

Psychological diagnosis – the label given to psychological abnormality by classifying and categorizing the observed behavior pattern into an approved diagnostic system.

Psychologist – an individual with a doctoral degree in psychology from an organized, sequential program in a regionally accredited university or professional school.

Psychology – the scientific study of the behavior of individuals and their mental processes.

Psychometric function – a graph that plots the percentage of detections of a stimulus (on the vertical axis) for each stimulus intensity (on the horizontal axis).

Psychometrics – the field of psychology that specializes in mental testing.

Psychoneuroimmunology – the research area that investigates interactions between psychological processes, such as responses to stress, and the functions of the immune system.

Psychopathological functioning disruptions in emotional, behavioral, or thought processes that lead to personal distress or block one's ability to achieve important goals.

Psychopharmacology – the branch of psychology that investigates the effects of drugs on behavior.

Psychophysics – the study of the correspondence between physical stimulation and psychological experience.

Psychosocial stages proposed by Erik Erikson, successive developmental stages that focus on an individual's orientation toward the self and others; these stages incorporate both the sexual and social aspects of a person's development and the social conflicts that arise from the interaction between the individual and the social environment.

Psychosomatic disorders physical disorders aggravated by or primarily attributable to prolonged emotional stress or other psychological causes.

Psychosurgery – a surgical procedure performed on brain tissue to alleviate a psychological disorder.

Psychotherapy any of a group of therapies, used to treat psychological disorders, that focus on changing faulty behaviors, thoughts, perceptions, and emotions that may be associated with specific disorders.

Puberty – the attainment of sexual maturity; indicated for girls by menarche and for boys by the production of live sperm and the ability to ejaculate.

Punisher any stimulus that, when made contingent upon a response, decreases the probability of that response.

Racism discrimination against people based on their skin color or ethnic heritage.

Range – the difference between the highest and the lowest scores in a set of observations; the simplest measure of variability.

Random sampling – a procedure in which every member of the population has an equal chance of being picked to participate in a study.

Randomized clinical trial (RCT) – a procedure for evaluating the outcome of therapy, usually involving random assignment of participants to one or more treatment groups or a no-treatment control group.

Ratio schedule – a pattern of delivering reinforcements only after a certain number of responses.

Rational emotive behavioral therapy – a form of cognitive therapy associated with Albert Ellis, in which the therapist actively challenges the patient's irrational beliefs.

Rationalization – a mechanism of defense by means of which unacceptable thoughts or impulses are reinterpreted in more acceptable and, thus, less anxiety-arousing terms.

Reaction formation – a mechanism of defense in which a forbidden impulse is turned into its opposite.

Reality principle one of two major principles that Freud held governed psycho- logical life. This principle is thought to characterize the ego, which is satisfied by finding strategies that work in the real world. *See also* pleasure principle.

Reasoning – the process of figuring out the implications of particular beliefs.

Recall – a type of retrieval that requires you to produce an item from memory in response to a cue or question. *See also* recognition, recollection.

Recency effect in free recall, the tendency to recall items at the end of the list more readily than those in the middle. *See also* primacy effect.

Receptive field for a particular cell in the visual system, the pattern of retinal stimulation that most effectively causes the cell to fire. For some cells, this pattern is defined solely in terms of a retinal location; for others, the most effective input has a particular shape, color, or direction of motion.

Recessive – a term for a gene that directs the development of a particular characteristic only if the corresponding gene on the other chromosome matches it – i.e., is the same allele.

Recognition – a type of retrieval that requires you to judge whether you have encountered a stimulus previously. *See also* recall, recollection.

Recollection recall of the context in which a certain stimulus was encountered. *See also* recall.

Reconditioning in classical conditioning, the presentation of further reinforced conditioning trials after a conditioned response (CR) has been extinguished.

Reflex – a simple, stereotyped reaction in response to a stimulus (e.g., flexing a limb in withdrawing from pain).

Refractory period – the time after an action potential during which a neuron's cell membrane is unprepared for the next action potential.

Reinforcement schedule. *See* schedule of reinforcement.

Reinforcer – a stimulus delivered after a response that makes the response more likely in the future.

Reliability – the degree of consistency with which a test measures a trait or attribute. *See also* test-retest reliability.

Reasoning – the process of thinking in which conclusions are drawn from a set of facts; thinking directed toward a given goal or objective.

Recall – a method of retrieval in which an individual is required to reproduce the information previously presented.

Recency effect – improved memory for items at the end of a list.

Receptive field – the visual area from which a given ganglion cell receives information.

Reciprocal determinism – a concept of Albert Bandura's social learning theory that refers to the notion that a complex reciprocal interaction exists among the individual, his or her behavior, and environmental stimuli and that each of these components affects the others.

Reciprocity norm expectation that favors will be returned – if someone does something for another person, that person should do something in return.

Recognition – a method of retrieval in which an individual is required to identify stimuli as having been experienced before.

Reconstructive memory – the process of putting information together based on general types of stored knowledge in the absence of a specific memory representation.

Reflex – an unlearned response elicited by specific stimuli that have biological relevance for an organism.

Refractory period – the period of rest during which a new nerve impulse cannot be activated in a segment of an axon.

Reinforcement contingency – a consistent relationship between a response and the changes in the environment that it produces.

Reinforcer any stimulus that, when made contingent upon a response, increases the probability of that response.

Reliability – the degree to which a test produces similar scores each time it is used; stability or consistency of the scores produced by an instrument.

Representative sample – a subset of a population that closely matches the overall characteristics of the population with respect to the distribution of males and females, racial and ethnic groups, and so on.

Resistance – the inability or unwillingness of a patient in psychoanalysis to discuss certain ideas, desires, or experiences.

Response bias – the systematic tendency as a result of nonsensory factors for an observer to favor responding in a particular way.

Resting potential – the polarization of cellular fluid within a neuron, which provides the capability to produce an action potential.

Reticular formation – the region of the brain stem that alerts the cerebral cortex to incoming sensory signals and is responsible for maintaining consciousness and awakening from sleep.

Retina – the layer at the back of the eye that contains photoreceptors and converts light energy to neural responses.

Retinal disparity – the displacement between the horizontal positions of corresponding images in the two eyes.

Retrieval – the recovery of stored information from memory.

Retrieval cues internally or externally generated stimuli available to help with the retrieval of a memory.

Reversal theory – theory that explains human motivation in terms of reversals from one to the other opposing metamotivational states.

Ritual healing ceremonies that infuse special emotional intensity and meaning into the healing process.

Rods photoreceptors concentrated in the periphery of the retina that are most active in dim illumination; rods do not produce sensation of color.

Rules behavioral guidelines for acting in certain ways in certain situations.

Sample – a subset of a population selected as participants in an experiment.

Scientific method – the set of procedures used for gathering and interpreting objective information in a way that minimizes error and yields dependable generalizations.

Self-actualization – a concept in personality psychology referring to a person's constant striving to realize his or her potential and to develop inherent talents and capabilities. According to Abraham Maslow and some other adherents of the humanistic approach to personality, the full realization of one's potential. See also hierarchy of needs.

Self-awareness – the top level of consciousness; cognizance of the autobiographical character of personally experienced events.

Self-concept – a person's mental model of his or her abilities and attributes.

Self-control – the ability to pursue a goal while adequately managing internal conflicts about it, or to delay pursuing a goal because of other considerations or constraints.

Self-efficacy – the sense a person has about what things he can plausibly accomplish.

Self-esteem – the relative balance of positive and negative judgments about oneself.

Self-fulfilling prophecies beliefs about how a person will behave that actually make the expected behavior more likely.

Self-handicapping – a self-protective strategy of arranging for an obstacle to one's own performance, so that failure can be attributed to the obstacle instead of one's own limitations.

Self-Monitoring Scale – a personality measure that seeks to determine the degree to which a person alters or adjusts their behavior in order to act appropriately in new circumstances.

Self-perception theory – the theory that we know our own attitudes and feelings only by observing our own behaviors and deciding what probably caused them, just as we do when trying to understand others.

Self-report data – data supplied by the research participant describing herself (usually, ratings of attitudes or moods, or tallies of behavior), rather than that collected by the experimenter.

Self-schema an organized body of knowledge about the self and that shapes one's behaviors, perceptions, and emotions.

Self-theory Carl Rogers's theory of personality, which emphasizes the individual's active attempts to satisfy his needs in a manner that is consistent with his self-concept.

Semantic feature – a basic semantic category or concept that cannot be decomposed into smaller or less inclusive categories. According to several strict theories (e.g., Hume, 1739), the basic features are all sensory-perceptual.

Semantic memory memory for facts (including word meanings); these memories are not tied to any specific time or place.

Semantic role – the part that each phrase plays in the “who did what to whom” drama described by a sentence. One word takes the role of being the cause of the action, another, its effect, and so on.

Semicircular canals structures in the inner ear that contain the receptors for the vestibular sense.

Semistructured interview – an interview in which questions are posed in a standardized yet flexible way.

Sensation seeking – a predisposition to seek novel experiences, look for thrills and adventure, and be highly susceptible to boredom.

Sensitive period – an early period during the development of an organism when it is particularly responsive to environmental stimulation. Outside of this period, the same environmental events have less impact and may yield imperfect learning even after lengthy exposure and practice.

Sensorimotor period in Piaget's theory, the period of cognitive development from birth to about 2 years, in which the child has not yet achieved object permanence.

Self-efficacy – the set of beliefs that one can perform adequately in a particular situation.

Self-esteem – a generalized evaluative attitude toward the self that influences both moods and behavior and that exerts a powerful effect on a range of personal and social behaviors.

Self-fulfilling prophecy – a prediction made about some future behavior or event that modifies interactions so as to produce what is expected.

Self-handicapping – the process of developing, in anticipation of failure,

behavioral reactions and explanations that minimize ability deficits as possible attributions for the failure.

Self-perception theory – the idea that people observe themselves in order to figure out the reasons they act as they do; people infer what their internal states are by perceiving how they are acting in a given situation.

Self-report measures – the self-behaviors that are identified through a participant's own observations and reports.

Self-serving bias – a class of attributional biases in which people tend to take credit for their successes and deny responsibility for their failures.

Semantic memories generic, categorical memories, such as the meanings of words and concepts.

Sensation – the process by which stimulation of a sensory receptor gives rise to neural impulses that result in an experience, or awareness of, conditions inside or outside the body.

Sensation seeking – a predisposition to seek novel experiences, look for thrills and adventure, and be highly susceptible to boredom.

Sensitive period an early period during the development of an organism when it is particularly responsive to environmental stimulation. Outside of this period, the same environmental events have less impact and may yield imperfect learning even after lengthy exposure and practice.

Sensorimotor period in Piaget's theory, the period of cognitive development from birth to about 2 years, in which the child has not yet achieved object permanence.

Sensory adaptation – a phenomenon in which receptor cells lose their power to respond after a period of unchanged stimulation; allows a more rapid reaction to new sources of information. The process by which the sensitivity to a stimulus declines if the stimulus is presented for an extended period of time.

Sensory coding – the process through which the nervous system represents the qualities of the incoming stimulus—whether auditory or visual, for example, or whether a red light or a green one, a sour taste or a sweet taste.

Sensory projection area *see* primary somatosensory projection area.

Sensory quality a distinguishing attribute of a stimulus (e.g., brightness, hue, or pitch).

Separation anxiety – a pattern of emotions and behaviors that reflect a child's fear when her mother (or other caregiver) leaves the room; usually observed in children 6 to 8 months of age.

Set point a general term for the level at which negative feedback tries to maintain stability.

Shallow processing an approach to memorization that involves focusing on the superficial characteristics of the stimulus, such as the sound of a word or the typeface in which it's printed.

Shape constancy the tendency to perceive objects as retaining their shapes despite changes in our angle of regard that produce changes in the image projected on the retina.

Shaping the process of eliciting a desired response by rewarding behaviors that are increasingly similar to that response.

Short-term memory *see* stage theory of memory.

Signal-detection theory – the theory that perceiving or not perceiving a stimulus is actually a judgment about whether a momentary sensory experience is due to background noise alone or to the background noise plus a signal.

Signs in psychopathology, what the clinician observes about a patient's physical or mental condition. *See also* symptoms.

Similarity in perception, a principle by which we tend to group like figures, especially by color and orientation.

Simple reaction time – a measurement of how quickly someone can respond to a stimulus.

Simultaneous color contrast – the effect produced because any region in the visual field tends to induce its complementary color in adjoining areas. For example, a gray patch will tend to look bluish if surrounded by yellow and yellowish if surrounded by blue.

Sine waves – waves (e.g., sound waves or light waves) that correspond to the plot of the trigonometric sine function.

Single-cell recording – a procedure of monitoring the moment-by-moment electrical activity of an individual cell in the nervous system.

Situational attributions explanations of someone's behavior in terms of the circumstances rather than aspects of the person.

Size constancy – the tendency to perceive objects as retaining their size, despite the increase or decrease in the size of the image projected on the retina caused by moving closer to or farther from the objects. *See also* unconscious inference.

Skin senses – the group of senses, including pressure, warmth, cold, and pain, through which we gain information about our immediate surroundings.

Slow-wave sleep – a term used for both Stage 3 and Stage 4 sleep; characterized by slow, rolling eye movements, low cortical arousal, and slowed heart rate and respiration.

Smooth muscles – the nonstriated muscles controlled by the autonomic nervous system. Smooth muscles constrict the blood vessels to help regulate blood pressure, and they line many internal organs.

Sensory memory – the initial memory processes involved in the momentary preservation of fleeting impressions of sensory stimuli. A type of memory included in early stage models, preserving sensory in “raw” form. Iconic memory holds onto visual inputs; echoic memory holds onto auditory inputs.

Sensory neurons – the neurons that carry messages from sense receptors toward the central nervous system.

Sensory physiology – the study of the way in which biological mechanisms convert physical events into neural events.

Sensory receptors specialized cells that convert physical signals into cellular signals that are processed by the nervous system.

Serial position effect – a characteristic of memory retrieval in which the recall of beginning and end items on a list is often better than recall of items appearing in the middle.

Serial processes two or more mental processes that are carried out in order, one after the other.

Set – a temporary readiness to perceive or react to a stimulus in a particular way.

Sex differences biologically based characteristics that distinguish males from females.

Short-term memory (STM) – memory processes associated with preservation of recent experiences and with retrieval of information from long-term memory; short-term memory is of limited capacity and stores information for only a short length of time without rehearsal.

Shyness an individual's discomfort and/or inhibition in interpersonal situations that interferes with pursuing interpersonal or professional goals.

Signal detection theory (SDT) – a systematic approach to the problem of response bias that allows an experimenter to identify and separate the roles of sensory stimuli and the individual's criterion level in producing the final response.

Situational variables external influences on behavior.

Social categorization – the process by which people organize the social environment by categorizing themselves and others into groups.

Social development – the ways in which individuals' social interactions and expectations change across the life span.

Social intelligence – a theory of personality that refers to the expertise people bring to their experience of life tasks.

Social-learning theory – the learning theory that stresses the role of observation and the imitation of behaviors observed in others.

Social-learning therapy – a form of treatment in which clients observe models' desirable behaviors being reinforced.

Social norms – the expectation a group has for its members regarding acceptable and appropriate attitudes and behaviors.

Social perception – the process by which a person comes to know or perceive the personal attributes of himself or herself and other people.

Social phobia – a persistent, irrational fear that arises in anticipation of a public situation in which an individual can be observed by others.

Social psychology – the branch of psychology that studies the effect of social variables on individual behavior, attitudes, perceptions, and motives; also studies group and intergroup phenomena.

Social role – a socially defined pattern of behavior that is expected of a person who is functioning in a given setting or group.

Social support resources, including material aid, socioemotional support, and informational aid, provided by others to help a person cope with stress.

Socialization – the lifelong process whereby an individual's behavioral patterns, values, standards, skills, attitudes, and motives are shaped to conform to those regarded as desirable in a particular society.

Sociobiology – a research field that focuses on evolutionary explanations for the social behavior and social systems of humans and other animal species.

Somatic nervous system – the subdivision of the peripheral nervous system that connects the central nervous system to the skeletal muscles and skin.

Stem cells – cells that are found in early stages of an organism's development and are the precursors for all the other cells; stem cells have not begun to specialize or differentiate.

Stereotype threat – a mechanism through which a person's performance is influenced by her perception that her score may confirm stereotypes about her group.

Stereotypes schemas that are often negative and are used to categorize complex groups of people. Generalizations about a group of people in which the same characteristics are assigned to all members of a group.

Stress – the pattern of specific and nonspecific responses an organism makes to stimulus events that disturb its equilibrium and tax or exceed its ability to cope.

Stress moderator variables – variables that change the impact of a stressor on a given type of stress reaction.

Stressor an internal or external event or stimulus that induces stress.

Structuralism – the study of the structure of mind and behavior; the view that all human mental experience can be understood as a combination of simple elements or events.

Superego – the aspect of personality that represents the internalization of society's values, standards, and morals. **Superego** In Freud's theory, reaction patterns that emerge from within the ego, represent the internalized rules of society, and come to control the ego by punishment with guilt. *See also* ego, id.

Sympathetic division – the subdivision of the autonomic nervous system that deals with emergency response and the mobilization of energy.

Synapse – the gap between one neuron and another.

Thalamus – the brain structure that relays sensory impulses to the cerebral cortex.

Thematic Apperception Test (TAT) – a projective test in which pictures of ambiguous scenes are presented to an individual, who is encouraged to generate stories about them.

Theory an organized set of concepts that explains a phenomenon or set of phenomena.

Theory of ecological optics – a theory of perception that emphasizes the richness of stimulus information and views the perceiver as an active explorer of the environment.

Tolerance – a situation that occurs with continued use of a drug in which an individual requires greater dosages to achieve the same effect.

Top-down processing perceptual processes in which information from an individual's past experience, knowledge, expectations, motivations, and background influence the way a perceived object is interpreted and classified.

Traits enduring personal qualities or attributes that influence behavior across situations.

Type A behavior pattern – a complex pattern of behaviors and emotions that includes excessive emphasis on competition, aggression, impatience, and hostility; hostility increases the risk of coronary heart disease.

Type B behavior pattern as compared to Type A behavior pattern, a less competitive, less aggressive, less hostile pattern of behavior and emotion.

Type C behavior pattern – a constellation of behaviors that may predict which individuals are more likely to develop cancer or to have their cancer progress quickly; these behaviors include passive acceptance and self-sacrifice.

Unconditioned response (UCR) in classical conditioning, the response elicited by an unconditioned stimulus without prior training or learning.

Unconditioned stimulus (UCS) in classical conditioning, the stimulus that elicits an unconditioned response.

Unconscious – the domain of the psyche that stores repressed urges and primitive impulses.

Unconscious inference Helmholtz's term for perception that occurs outside of conscious awareness.

Validity – the extent to which a test measures what it was intended to measure.

Variable in an experimental setting, a factor that varies in amount and kind.

Vestibular sense – the sense that tells how one's own body is oriented in the world with respect to gravity.

Weber's law is assertion that the size of a difference threshold is proportional to the intensity of the standard stimulus.

Wellness is optimal health, incorporating the ability to function fully and actively over the physical, intellectual, emotional, spiritual, social, and environmental domains of health.

Wisdom expertise in the fundamental pragmatics of life.

Working memory a memory resource that is used to accomplish tasks such as reasoning and language comprehension; consists of the phonological loop, visuospatial sketchpad, and central executive.

Yerkes-Dodson law – a correlation between task performance and optimal level of arousal.

The recommended literature

Main Literature:

1. Gleitman H., Gross J., Reisberg D. Psychology. – 8th ed. ISBN 978-0-393-93250-8. – New York, London, 2011. – 850 p.
2. Stangor Ch., Walinga J. Introduction to Psychology – 1st Canadian Edition. 2010 Charles Stangor. This Textbook Is Available For Free At Open. Bccampus.Ca
3. The Cambridge Dictionary of Psychology. General Editor David Matsumoto. Cambridge University Press, 2009.
4. David G. Myers Psychology Ninth Edition. By Worth Publishers, 2010.
5. Sternberg R.J., Sternberg K., Mio G. Cognitive Psychology Sixth Edition. Wadsworth, Cengage Learning, 2012.
6. Рубинштейн С.Л. Основы общей психологии. – СПб., 1999. – 720 с.
7. Леонтьев А.Н. Деятельность. Сознание. Личность. – М.: Книга по требованию, 2012. – 130 с.
8. Леонтьев А.Н. Проблемы развития психики, 1981.
9. Выготский Л.С. Избранные психологические исследования. – М., 1956.
10. Асмолов А.Г. Психология личности: принципы общепсихологического анализа. – М.: Смысл, 2001. – 414 с.

Additional Literature:

1. Corr P.P.J, Matthews G. The Cambridge Handbook of Personality Psychology. Cambridge University Press 2009.
2. Kustubayeva A.M., Tolegenova A.A., Kamzanova A.T., Jakupov M.S. Psychology of interpersonal communication. – Almaty: «Kazakh University», 2015. – 65 с.
3. Jakupov S.M. General psychology: Introduction. – Almaty: Kazakh University, 2014
4. Хьелл Л., Зиглер Д. Теории личности. СПб.: Питер Пресс, 1997.
5. Fernald LD. Psychology: Six perspectives. Thousand Oaks, CA: Sage Publications. 2008. – P.12-15.
6. Hockenbury & Hockenbury. Psychology. Worth Publishers, 2010.
7. Adler R.B. and Rodman G. Understanding Human Communication. 9th edn. New York: Oxford University Press. 2006
8. Argyle M. Social Interaction. – London: Methuen, 1969
9. “Theories of Emotion”. Psychology.about.com. 13 September 2013. Retrieved 11 November 2013.

10. Gaulin Steven J. C. and Donald H. McBurney. *Evolutionary Psychology*. Prentice Hall. 2003. ISBN 978-0-13-111529-3, Chapter 6, p 121-142.
11. Schacter, Daniel L. *Psychology Second Edition*. 41 Madison Avenue, New York, NY 10010: Worth Publishers. p. 310. ISBN 978-1-4292-3719-2.-2011.
12. Barrett, L.F. and Russell, J.A. *The psychological construction of emotion*. Guilford Press. 2015. ISBN 978-1462516971.
13. *Glossary of Psychological Terms*. From G.R.J. & Ph.G. Zimbardo. *Psychology and Life*, 16-edition. Published by Allyn and Bacon, Boston, MA. Copyright (c) 2002 by Pearson Education
14. Margaret A. Boden *Artificial Intelligence in Psychology: Interdisciplinary Essays (Explorations in Cognitive Science)*. – June, 1989- 350 p.
15. Аманова И.К. *Теоретико-методологические основы психологии*. – Алматы: Нурай-Принт, 2009. – 189 с.
16. Камзанова А.Т. *Тенденции развития психологической науки. «Казак университеті»*, Алматы, 2016. – 138 с.

(Footnotes)

1. *The Cambridge Dictionary of Psychology*. General Editor D. Matsumoto. Cambridge University Press 2009. P. 411
2. *The Cambridge Dictionary of Psychology*. General Editor D. Matsumoto. Cambridge University Press 2009. P. 559
3. *The Cambridge Dictionary of Psychology*. General Editor D. Matsumoto. Cambridge University Press 2009. P. 129
4. *The Cambridge Dictionary of Psychology*. General Editor D. Matsumoto. Cambridge University Press 2009. P. 78
5. *The Cambridge Dictionary of Psychology*. General Editor D. Matsumoto. Cambridge University Press 2009. P. 117
6. *The Cambridge Dictionary of Psychology*. General Editor D. Matsumoto. Cambridge University Press 2009. P. 336
7. *The Cambridge Dictionary of Psychology*. General Editor D. Matsumoto. Cambridge University Press 2009. P. 344
8. *The Cambridge Dictionary of Psychology*. General Editor D. Matsumoto. Cambridge University Press 2009. P. 196
9. *The Cambridge Dictionary of Psychology*. General Editor D. Matsumoto. Cambridge University Press 2009. P. 328
10. *The Cambridge Dictionary of Psychology*. General Editor D. Matsumoto. Cambridge University Press 2009. P. 319
11. *The Cambridge Dictionary of Psychology*. General Editor D. Matsumoto. Cambridge University Press 2009. P. 319
12. *The Cambridge Dictionary of Psychology*. General Editor D. Matsumoto. Cambridge University Press 2009. P. 484

13. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 484
14. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 570
15. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 65
16. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 535
17. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 535
18. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 346
19. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 2
20. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 369
21. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 221
22. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 407; 221; 269; 295.
23. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 248
24. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 59
25. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 303
26. The Oxford Dictionary of Psychology. Third edition. Andrew M. Colman. Oxford University Press 2009. P. 366
27. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 229
28. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P. 543
29. <http://www.businessdictionary.com/definition/creative-thinking.html>
30. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P.56
31. Gleitman H., Gross J., Reisberg D. Psychology. - 8th ed. ISBN 978-0-393-93250-8. - New York, London, 2011. – 850 p. P.553
32. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P.54
33. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P.8

34. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P.277
35. <https://en.wikipedia.org/wiki/Speech>
36. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 262
37. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P.259
38. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009. P.52
39. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 179
40. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 19
41. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 314
42. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 524
43. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 524
44. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 179
45. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 371
46. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 371
47. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 502
48. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 502
49. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 502
50. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 375
51. Stangor Ch., Walinga J. Introduction to Psychology - 1st Canadian Edition. 2010 Charles Stangor. This Textbook Is Available For Free At Open Bccampus. – P.49
52. Stangor Ch., Walinga J. Introduction to Psychology - 1st Canadian Edition. 2010 Charles Stangor. This Textbook Is Available For Free At Open Bccampus. – P.56
53. Stangor Ch., Walinga J. Introduction to Psychology - 1st Canadian Edition. 2010 Charles Stangor. This Textbook Is Available For Free At Open Bccampus. – P.66

54. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 538
55. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 104
56. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 412
57. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 387
58. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 1
59. https://en.wikipedia.org/wiki/Gifted_education
60. <http://dictionary.cambridge.org/dictionary/english/talent>
61. <http://www.dictionary.com/browse/genius>
62. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 120
63. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 127
64. The Cambridge Dictionary of Psychology. General Editor D. Matsumoto. Cambridge University Press 2009.P. 127

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