

Fundamental and Developmental Psychology

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INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

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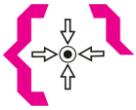
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Meaning of the Icons in the Text



Objectives

A list of objectives is provided at the beginning of each chapter.



Time Demands

An estimate of how much time you will need to study the chapter.



Terms to Remember (Key Words)

A list of important terms and main points that the student should not omit when studying the topic.



Practical Application of the Subject – Tasks, Activities

Miscellaneous less important or clarifying information in a note.



Review Questions

Verifying to what extent the student has understood the text and the issue and remembers fundamental and important information.



Summary

A summary of the topic.



Literature

Used in the text and to complement and further one's knowledge.

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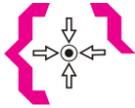
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1 INTRODUCTION TO GENERAL PSYCHOLOGY



Objectives

After studying this chapter you will gain insight into general psychology as a science and into its history. You will become familiar with the basic psychological terms and learn to classify them, and you will also learn about the various methods used in psychology.



Terms to Remember (Key Words)

- substantialism
- subjective experience
- behaviourism
- psyche
- behaviour
- lived experience
- consciousness
- unconsciousness
- personality
- determination
- developmental factors
- genotype
- phenotype
- mental development
- research methods in psychology - data collection
- research methods in psychology - data analysis
- ethical principles of research conduct

1.1 History of General Psychology and its Current Definition

Before we get to the current definition of the subject matter of psychology, let us have a look at the basic milestones in its **history**.

▪ **Psychology as the Science of the Soul**

Various opinions on mental life could be found as early as in the oldest philosophical systems (Ancient Egypt, Ancient India, Ancient China, and Ancient Greece). This 'pre-historic' period of psychology speaks about various **concepts of the soul** (Nakonečný, 1995). **Substantialism** had the greatest influence until the end of the

19th century, perceiving the soul as a special substance and the bearer of life hidden in various bodily organs (head, heart, liver, kidneys).

Aristotle was the first philosopher to lay down the first systematic foundations of psychology in the 4th century BC, *in particular in his treatise **On the Soul***. This scholar discovered a range of mental regularities. *The principle of the recollection (retrieval) of ideas, associations by likeness, is one of the most significant principles in psychology*. Aristotle requires a method of observation, allowing description, explanation and observation of the creation and development of manifestations of the soul that he perceived as a governing principle.

▪ **Psychology as the Science of Subjective Experience**

Psychology broke away from philosophy at the end of the 19th century due to the development of the natural sciences. The establishment of psychology as a separate field of scientific study is related to the foundation of the first experimental psychology lab in Leipzig by Wilhelm Wundt (1832–1920) in 1879. The term 'soul' had nearly disappeared from the psychological lexicon during scientific research and explorations. Experience was regarded as the only reality. The subject matter of psychology was defined as **consciousness** or **internal, subjective lived experience**. **Self-observation of one's own lived experience** was the most frequently used research method. However, it was also subject to major criticism due to its sophisticated application (Hockenbury and Hockenbury, 2010).

▪ **Psychology as the Science of Behaviour**

Supporters of behaviourism were the sharpest critics of subjective experience at the beginning of the 20th century. *The name was derived from the English term 'behaviour'*. This psychological school sought to provide objective scientific psychology. It absolutely rejected terms such as 'consciousness' and 'mind' and focused on observable manifestations of the psyche. **Behaviour** was considered to be the only subject matter of psychology. Despite gaining significant influence at the time, this approach could not last in its original form. The most orthodox ideas were reviewed by their successors, the neo-behaviourists.

▪ **Psychology as the Science of Lived Experience and Behaviour**

Nowadays, the majority of psychologists have more or less agreed on a concept striving to overcome the one-sidedness of all the previous approaches. Psychology focuses on the psyche manifested in **lived experience and behaviour**. But as we



will see at the end of this chapter, not even this definition of the subject matter of psychology is complete.

1.2 Basic Psychological Terms

In psychology, **behaviour** means any action of an individual that is observed by another person or registered by laboratory equipment. Štefanovič (1974) classifies behavioural manifestations into several categories:

- **Reactions**, actions of muscles and the endocrine glands, working on an innate (i.e. not acquired) basis. *This means mainly unconditioned reflexes and instincts.*
- **Responses**, actions of muscles and the endocrine glands, working on an acquired (i.e. not innate) basis. *This means, for instance, habits and other behavioural patterns resulting from previous personal experience.*
- **Conduct** means all actions undertaken consciously.
- **External expression** is manifested through facial changes, vegetative changes (changes in breathing, pulse, sweating), facial expressions, gesticulations, etc.
- **Speech** is described as so-called verbal behaviour. Both the content aspect of speech (what is said) and the formal aspect (how it is said) are important from a psychological perspective.

While **behaviour** represents external manifestations of mental activities, **lived experience** is understood as all internal experiences accompanying mental activities of which an individual is aware. Lived experience is subjective and unique. However, external manifestations of lived experience, i.e. behaviour, need not reflect it to the full extent. *Sometimes, we are, for instance, unable to communicate everything we experience through speech.* Nakonečný (1998b) divides the content of **lived experience** into the following:

- cognition (**perception, ideas, thinking, memory, learning**);
- feeling (**feelings, emotions**);
- wanting (**lived experience of the motivation processes**).

The psyche represents the ultimate form of a human being's regulation and self-regulation. The psyche is not only attributed to human beings; it is also a certain

regulatory mechanism in animals. As is apparent from the enumeration given above, there are manifold and diverse manifestations of mental activities, **i.e. mental phenomena**. They can be further divided into: **mental processes, mental states** and **mental properties**. Additional details about these phenomena will be given in the following chapters.

Consciousness is the ultimate quality of mental activities that can only be attributed to human beings. In psychology, consciousness is understood as the realisation of one's own lived experience, i.e. in particular as the realisation of one's self and the surrounding world. The content of consciousness is highly variable and we do not realise its individual parts in the same manner. This means that not all mental phenomena are fully conscious. Many phenomena are at the **half-conscious (subconscious)** or even **unconscious** level, meaning that we cannot retrieve them or they have been suppressed into unconsciousness.

*The concept of personality according to Sigmund Freud, one of the most significant psychologists of the 20th century and the person who introduced the term 'unconsciousness' into psychology, can be used as an illustrative example. Freud compares personality to an iceberg. Its top sticking out above the surface is the fully realised part of personality, **consciousness** (conscious mind). **Pre-consciousness**, the layer underneath the conscious mind, includes the ideas, experiences or conflicts one was formerly aware of, but which were later forgotten and which can be, however, easily retrieved. The lowest part of the iceberg, **unconsciousness**, is a labyrinth of ideas, distorted pictures of reality and desires that we are not aware of. Still, such ideas, taking the form of motives, strongly affect our behaviour and lived experience (Drapela, 1997).*

Any list of basic psychological terms must also include at least a brief outline of the term '**personality**'. Personality can be understood as a **mental whole** characterised by:

- **internal integrity and structuring of its items** (i.e. mental properties and processes);
- **individual particularity** (dissimilarity with other personalities);
- **developmental continuity** (relative stability of mental properties despite continuing developmental changes).

You will have probably drawn the conclusion – and not only from the basic psychological categories defined above – that the human psyche is a highly sophisticated phenomenon that may be hard to be well versed in. For the purpose of

easily getting to the heart of this phenomenon, the above definition of the subject matter of psychology as the science of behaviour and lived experience has also been simplified. That is why we should instead consider **behaviour and lived experience** as a **starting point to get to know personality in its entire life context**.

1.3 Determination of the Human Psyche

As defined above, the psyche is the ultimate factor regulating human beings. What conditions must be met for the human psyche to undergo typical development? According to the above definition of behaviour, the psyche is tied to an organism's activity. This means that its precondition is the nervous system, the stimuli mediated by the sense organs, certain innate purposeful ways we behave (instincts) and also the passing of certain qualities (physical, mental) from parents to children (heredity). The following example can illustrate the fact that the nervous system alone is not enough for the development of the human psyche:

In 1920, Indian missionary Singh found two children in a wolf's lair – two-year-old Amala and eight-year-old Kamala. Scientists believed that the girls had lived in the wolves' company since the age of six months. They behaved like wolves, walked on all fours, growled, showed their teeth, ate raw meat, used hands to walk and run only, and used their mouths as their seizing organ. They were frightened of people. They slept huddled in a corner during daytime and got livelier at night when they howled like wolves. The younger of them died within a year; the older died at the age of 17, but had never caught up on her educational deficit despite the intensive care devoted to her. She started walking upright after six years; she learned to speak only 100 words and to make only the simplest sentences (Hartl, Hartlová, 2000).

The said example illustrates the fatal consequences of the lack of social contact (social deprivation), especially in early childhood. There is currently no doubt that a human being is both a biological and a social being. We are born with certain genetic predispositions into a certain social environment. This means that we can speak of the double determination (interdependence) of the psyche: biological and sociocultural. There are therefore **two groups of developmental factors** that mutually affect the development of the human psyche:

- **biological (internal)**
- **sociocultural (external)**

Biological determination is based on the innate constitution of human beings. It consists of the sense organs, the nervous system, the predispositions conditioned by inheritance, and the instincts. The instincts include innate species-specific and biologically purposeful ways of behaving.

The nervous system (and the functionally related hormonal/endocrine system) is an element linking the physical (somatic) existence and mental life of human beings. According to Vágnerová (1997), interactions between physicality and the psyche are in particular reflected in the following areas:

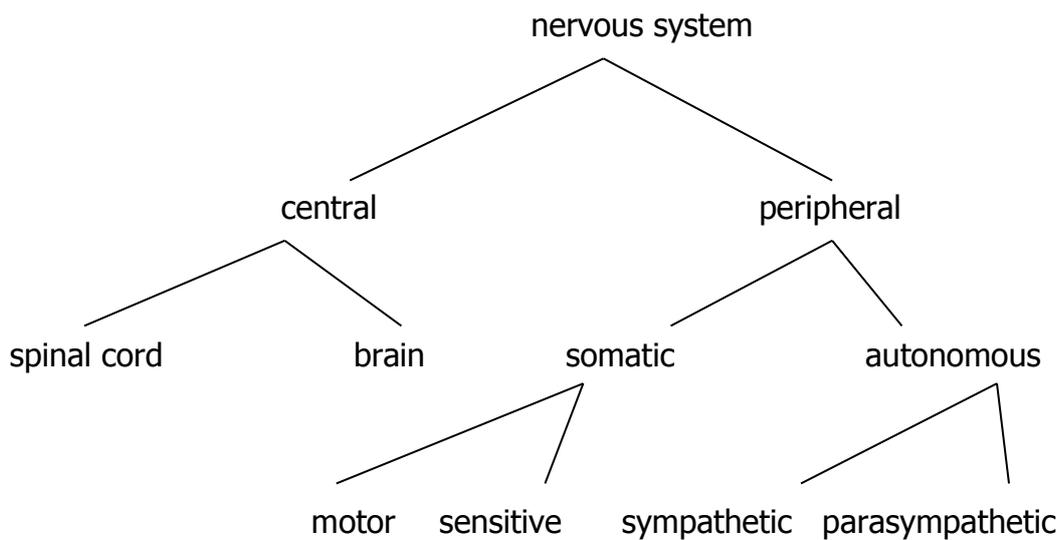
- **Mental processes depend on the maturity and activity of the brain.** Brain disorders can cause mental deviations. *For instance, certain mental powers can be lost after a brain haemorrhage; emotionality can change.*
- **The functional condition of certain cerebral areas affects specific mental functions.** *Sight functions are influenced by the functional condition of the sight centre in the occipital lobe.*
- **Emotional (affective) and instinctual behaviour depend on the hormonal phenomena.** *For instance, manifestations of instincts can be slowed down and weakened as a result of reduced thyroid gland function.*

The nervous system consists of several particular systems with various differentiated functions (see Scheme 1 below). The **central nervous system (CNS)** consists of the brain and the spinal cord. The **peripheral nervous system** is composed of somatic and autonomous nerves. The **somatic nerves** include **sensitive** nerves leading impulses from the sensory receptors, skin and muscles to the CNS, and **motor** nerves transmitting neural impulses from the CNS to the skeletal muscles. The **autonomous nervous system** regulates the activities of the glands and the smooth muscles making up the internal organs (heart, ventricles, vessels, etc.). It has two parts, the **sympathetic nervous system** and the **parasympathetic nervous system**, whose activities are supplementary.

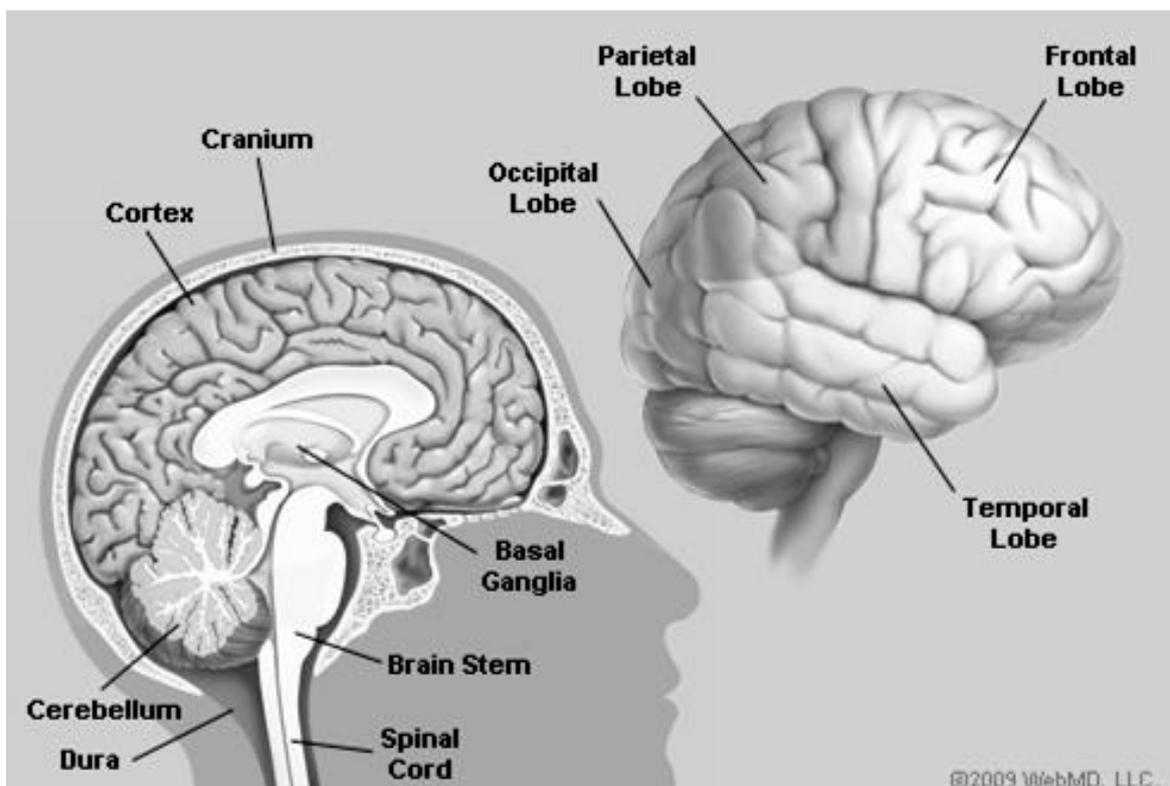
Various parts of the brain are specifically related to certain mental activities. Now, let us focus on the individual parts of the central nervous system (see Scheme 2). The **brain stem** consists of several parts having various functions:

- The **bulb of the spinal cord** (medulla oblongata) controls vegetative activities.

- The **little brain** (cerebellum) controls muscle tone, body balance and coordination of voluntary movements. *Temporary functional disorders of the little brain, typically displayed through disrupted stability and physical coordination, can be observed after alcohol drinking.*
- The **thalamus** regulates the input of information from the sense organs to the brain and influences the level of vigilance of the consciousness.
- The **hypothalamus** mediates hormonal regulation of the organism. It also influences the course of motivations and emotions.
- The **reticular formation** facilitates the non-specific activation of cortex, thus affecting the level of consciousness and attention conditions.
- The **limbic system** regulates the hypothalamus during the activation of motivational and emotional processes. *Any irritation of the limbic system can cause hot-tempered emotions, aggression, rage, fury, fear, etc.*



Scheme 1: **Nervous System and its Sub-systems** (freely according to Nakonečný, 2003)



Scheme 2: **Main Areas of the Human Brain** (WebMD, 2009)

The **end brain** (telencephalon) comprises two symmetric **hemispheres** interconnected only in the **corpus callosum** area. It has been found that each cerebral hemisphere has a different psychophysiological function. The **right hemisphere** is older in terms of its development and is responsible for so-called opinion activities. It is important for orientation in the world, recognition of visual and auditory figures, spatial orientation, the mechanism of drawing attention, lived experience and expression of emotions. It is vital especially in the first years of life. When a child starts going to school, functionalities move to the left hemisphere in relation to the acquired reading and writing abilities. The **left hemisphere** is responsible for the functions related to the development of speech and thinking. It is important for speech understanding, spoken and written communication and active verbal expressions. Its role is to ensure symbolic and analytical-synthesising thinking; considerations respecting temporal and spatial relations. It is more intensively used in learning at school than the right hemisphere (see Table 1 below).

Left hemisphere	Right hemisphere
Analysis Planning Mathematics Organisation Speech/reading	Synthesis Emotions Musicality Body language Rhythm/dance
<p style="text-align: center;">Digital thinking</p> Verbal communication Memory for words/digits Linguistic memory Detailed Logical	<p style="text-align: center;">Analogue thinking</p> Visual communication Memory for persons/things Perceptive memory Holistic Figuratively illustrative

Table 1: **Functional Specialisation of the Brain Hemispheres**
 (freely according to Kosslyn and Rosenberg, 2011)

Sociocultural determination is based on the stimuli coming from the social environment an individual was born into. The process of personality formation through the acquisition of social experience gained from contact with other people is called **socialisation**. It results in the internalisation of the knowledge, standards, attitudes, habits, rules and roles that are valid and required in the given social environment. This is the way an individual becomes part of the society.

The **family** is the most important primary socialisation factor; its specific atmosphere and methods of upbringing are the sources of the first and often critical experiences of a child. During the course of life, an individual becomes a member of other social groups, each having a specific impact. The most important groups are usually the **school class** and later the **working group**. The wider society has an impact on personality development primarily through the mass media.

The biological and sociocultural determinants of the human psyche **interact**, with the first creating the material conditions for the influence of the latter, and with the psyche affecting, in return, an organism's physiological functions.

Inherited predispositions, the so-called **genotype**, are a set of hereditary prerequisites (predispositions) to develop certain manifestations. However, their specific manifestations depend on the stimuli coming from the external environment.

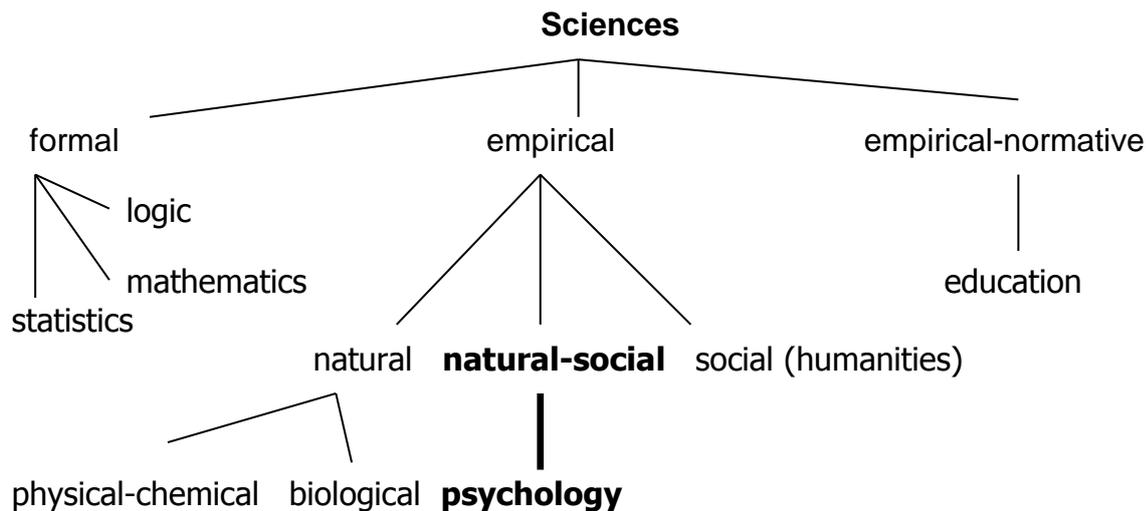
This specific expression of a specific genotype in a specific environment is called a **phenotype**.

Mental development that is manifested through the development of innate predispositions interacting with the environment, as we have said, is realised through **two mechanisms, i.e. maturing and learning**. **Maturing** gives effect to a certain genotype programme causing developmental changes to proceed in a certain stable order. The development of individual mental functions would be impossible without maturing, i.e. without the readiness of the nervous system. It also creates the border beyond which development cannot go, however good the stimulation from the external stimuli may be. It mostly affects only the prerequisites for the development of certain mental manifestations. Its further development is possible thanks to learning. **Learning** means changes in the mental processes and qualities induced by experience.

1.4 Psychology in the System of Sciences; System of Psychological Sciences

The position of psychology in the system of sciences is based on the dual conditioning of the human psyche. Psychology is an empirical, natural social science (see Scheme 3). As an interdisciplinary study, it closely cooperates with many sciences, in particular biology, sociology, anthropology, and cultural sociology, as well as methodology, cybernetics, informatics and statistical mathematics.





Scheme 3: **Position of Psychology in the System of Sciences** (Nakonečný, 1998b)

The amount of new knowledge has increased sharply since the end of the 19th century, when psychology became an experimental science. The science also underwent massive development during the course of the 20th century, especially with the growing requirements of practice and the related theoretical fields, and its specialisation appeared necessary. Psychology has gradually been categorised into many disciplines. The **basic psychological sciences** include:

- **developmental (ontogenetic) psychology**, examining the mental development of an individual from the prenatal period through childhood, to adulthood and to the old age;
- **phylogenetic (comparative) psychology (ethology)**, examining the concordance and differences between human and animal beings;
- **pathopsychology**, observing mental changes in individuals during a disease;
- **general psychology**, giving an overall picture of the human psyche;
- **psychopathology**, focusing on mental disorders and the regularities of the ill psyche;
- **biological psychology**, studying the physiological mechanisms of mental phenomena;
- **social psychology**, concerned with the regularities of an individual's integration into the society;
- **personality psychology**, focusing on the study of the structure and dynamics of personality.

The system of **applied psychological sciences** includes, for instance:

- **clinical psychology**, concerned especially with psychological assessment and psychotherapy;
- **mental hygiene**, looking into the psychological issues in healthcare, hygiene and prevention;
- **work (management) psychology** (occupational psychology), examining the human psyche in the selection of various professions, also providing preparation and training;
- **educational psychology**, focusing on the educational practice from the psychological perspective;
- **forensic psychology**, concerned with the psyche of individuals in conflict with the law;
- **consulting psychology**, having several branches. *For instance, (consulting) school psychology usually works with students and their parents, helping them solve problems with their upbringing and education;*
- **sport psychology**, examining the psychological issues related to high-level sports activities.

1.5 Research Methods in Psychology

Scientism in any field of study is preconditioned with the existence of research methods applied to gain new knowledge and subsequently generate theories. When exploring the human psyche, psychologists usually use one of two strategies.

With the **correlational research strategy**, psychologists usually observe a larger number of persons. The data are often collected using the questionnaire method or through testing. The results are subsequently transformed into numerical codes and analysed using mathematical and statistical methods. The application of this research strategy provides information about the mean values, which allows for making comparisons between various groups and expressing the degree of consistency (**correlation**) between and among two or more phenomena. The numerical values compared to a certain standard are decisive. This is also why this approach is also called the **quantitative research strategy**.

The other possibility is the **casuistic research strategy**. In this approach, we work only with one or a few persons (cases). Data collection is based on interviews combined with observation, an analysis of activity results and an analysis of expert

documentation. Observation of one or a few cases makes it possible to capture the psyche in a wider and deeper context. The application of this research strategy provides non-numerical data (e.g. verbal codes and categories and prerequisites forming a basis for the development of new theories). This procedure is also called the **qualitative research strategy**.

The specific procedures applied to acquire or further analyse the data collected are called methods. The correct application of methods is an important condition for correct research. The research methods in psychology are classified into **methods of data collection** and **methods of data analysis**. The selection of the method depends on the target of research. A combination of several methods is usually applied to prevent the shortcomings inherent in each method. The methods used for psychological data collection include **observation, experiment, interview, anamnesis, analysis of activity results, tests and questionnaires**.

Observation is a purposeful, systematic, planned and methodical perception of certain phenomena of which a record is usually made. It can be made as a visual record (video) or as a written or computer record in a protocol. The observer adheres to the principle of respecting a spontaneous course of the phenomenon observed and should endeavour to avoid certain errors (prejudices, stereotypes, traditions, halo effect). This is why observation should be well-considered and planned in advance. The benefits of observation include the easy availability of the method; its disadvantages include a risk of biased results caused by the aforementioned errors in the observer's perception.

Experiment is the most exact method used to verify scientific theories. An experiment observes the way a certain mental phenomenon changes (dependant variable) depending on the changing conditions (independent variable), and the variables are intentionally manipulated for this purpose. When carrying out an experiment, we also seek to control any undesired effects as much as possible (undesired variables) which could distort the experimental results. The first psychological experiments were performed in **laboratories** where it was possible to eliminate any disturbing impacts. However, since it was hard to draw general conclusions in normal life from the results of these investigations, the so-called **natural experiment** started to be used under normal conditions. It is currently often used, for instance, to verify new educational methods or psychological or psychotherapeutic interventions. Natural experiment is based on a comparison of two groups of people, **an experimental group** subjected to the new method and a **control group** educated or treated in a normal way.

Interview (dialogue) is another method that is commonly used not only as a research method (in particular in the qualitative research approach), but also as a counselling or therapeutic method. Its application provides not only data apparent from observation (various forms of behaviour), but also information about an individual's internally lived experience and behavioural motives. The quality of the data collected depends on the interviewer's experience and skills. An **anamnestic interview** is one of the frequently used types of interview, establishing the data from an individual's past (whether about health condition and previous diseases, mental development in childhood or development of school attendance). An interview can also have different structuring. An interview is **structured** if the questions are set in advance and in a standard order. A **partly structured interview** has various defined thematic groups without the need to stick to any order. A **free** interview has no predefined parts and is based on the current ideas and needs of the researcher.

An **analysis of activity results** is an analysis of an individual's work. This method is based on the prerequisite that an individual's entire personality is reflected in any product of human activities. By analysing this product, we can therefore gain fairly distinctive information about the personality's unique qualities. In the case of school children, products of activities can include drawings, poems, diaries, ways of managing school notebooks, creations or results from their hobbies, or autographic texts. The drawbacks of this method include the polyvalence (ambiguity) of the data collected, which makes it hard to interpret them. That is why this method is typically used in combination with other methods.

Questionnaires and **tests** are very widely used methods. What is the difference between them? **Questionnaires** usually identify attitudes or various personality traits. There are no correct or wrong answers. All results must be evaluated in relation to a certain criterion. For instance, if the result says that you are not very communicative and like working in peace and alone, you will apparently not be a suitable candidate to be a teacher. On the other hand, this result would be a strength in a biology lab, for instance.

The aim of **tests**, typically focusing on a certain performance, is to give correct answers and get as many points as possible. IQ tests are apparently the most well-known representative of this type. However, psychology also uses tests measuring a wide range of other mental functions (memory, attention, imagination, creativity, frustration tolerance, etc.). Their structure can be similar to the didactic tests used at school, but if a test is to be used as a research method, it should meet the basic criteria: **objectivity and standardisation**. A test's **objectivity** excludes the impact of the researcher's subjectivity. It is provided through adherence to the same

conditions for all persons subject to the research (this is related to the instructions provided, time available to design the test and the environment where the test takes place). Test **standardisation** is a common name for three various test properties that guarantee its quality: validity, reliability, and setting of standards (Svoboda, 1913). The **validity** of a test shows to what extent the test actually measures what should be measured (Svoboda, 1913). However, if we take various perspectives into account, there are various types of validity. For instance, prediction validity expresses the likeliness of concordance between the test result and the behaviour of the person subject to examination (e.g. the work success of a selected candidate). Conceptual validity determines which psychological qualities are measured (if we actually measured intelligence, for instance, or memory abilities only). The **reliability** of a test means the reliability of measurements and expresses its stability over time and internal consistency (Svoboda, 1999). High test reliability is shown, for instance, if the test is used twice with the same respondent and always shows the same result. A standardised test must also include **standards** to which the results obtained are compared during evaluation. Standards are created based on testing a representative set of people.

No research is over with the collection of data. Data must be analysed so that they can be further utilised. In psychology, we differentiate two basic **approaches to the analysis of research data**: quantitative and qualitative. **Quantitative data analysis** works with numerical data that are analysed using **mathematical and statistical methods**. Currently, there are special programs that help make these calculations easy (the simplest include MS Excel; the more sophisticated include SPSS). **Qualitative analysis** uses non-numerical data (e.g. a transcript of an interview, a video recording, or written medical documentation) that are analysed through **description, sorting, content analysis, etc.**



Review Questions

1. From when can we date the existence of psychology as a separate science?
2. Who was the first psychologist to start taking unconsciousness into account and what was his approach?
3. What does the term 'psyche' mean and how has its content changed over time?
4. What behavioural manifestations can there be in the psychological sense?
5. What are instincts and how are they related to the human psyche?



6. Under what conditions can the human psyche successfully develop?
7. Is there any difference between the left and right cerebral hemispheres, and if yes, what is the difference?
8. What does the term 'primary socialisation' mean?
9. What does 'phenotype' mean?
10. Read a book by Zdeněk Matějček, František Koukolík or other authors about the consequences of inappropriate socialisation in early childhood.
11. Compare as many aspects of the observation and experiment methods as possible.



Literature

ATKINSON, R.L. *Hilgard's Introduction to Psychology*. New York: Harcourt, Inc., 2000.

DRAPELA, V. *Přehled teorií osobnosti*. Praha: Portál, 1997. ISBN 80-7178-134-7.

HARTL, P., HARTLOVÁ, H. *Psychologický slovník*. 1. vyd. Praha: Portál, 2000.
HOCKENBURY, D. H, HOCKENBURY, S. E. *Psychology*, 5th Edition, New York: Worth Publishers, 2010.

KOSSLYN, S. M., ROSENBERG, R., S. *Introducing Psychology*. 4th Edition, Boston: Pearson, 2011.

KOUKOLÍK, F., DRTILOVÁ, J. *Vzpouza deprivantů*. Nové vydání. Praha, Galén 2006

MATĚJČEK, Z., LANGMEIER, J. *Psychická deprivace v dětství*. Praha, Karolinum, 2011.

NAKONEČNÝ, M. *Úvod do psychologie*. 1. vyd. Praha: Academie, 2003.

NAKONEČNÝ, M. *Základy psychologie*. 2. vyd. Praha: Academia, 1998a.

NAKONEČNÝ, M. *Encyklopedie obecné psychologie*. 1. vyd. Praha: Academia, 1998b.

NAKONEČNÝ, M. *Průvodce dějinami psychologie*. 1. vyd. Praha: SPN, 1995.

SVOBODA, M., HUMPOLÍČEK, P., ŠNOREK, V. *Psychodiagnostika dospělých*. Praha: Portál, 2013.

VÁGNEROVÁ, M. *Úvod do psychologie*. 1. vyd. Praha: UK, 1997.

2 20th CENTURY SCHOOLS OF PSYCHOLOGY



Objectives

After studying this chapter you will become familiar with the main opinions that emerged in psychology during the 20th century. You will understand the conditions of their foundations and learn about their authors. You will be able to distinguish them according to various viewpoints and evaluate their contributions to theory and practice in psychology.



Terms to Remember (Key Words)

- paradigm
- environmentalism
- nativism
- interactionism
- archetypes
- Gestalt movement
- cognitive psychology
- psychoanalysis
- individual psychology
- analytical psychology
- collective unconsciousness
- humanistic psychology
- transpersonal psychology
- phenomenological psychology

2.1 Opinion Mainstreams in 20th Century Psychology

As we could see in the previous chapter, the development of opinions on the human psyche has undergone many different stages since antiquity. The 20th century was no exception. Various paradigms had been formed in psychology since the end of the 19th century. A **paradigm** can be defined as a model of thinking created by science about the qualities of its subject and the methods of its research.

Although the original form of the majority of these approaches has now become a thing of the past, at the time they encouraged the search for a wider and more appropriate view of the sophisticated phenomenon of the human psyche. Moreover, we still encounter the names of many of the authors of these theories and their successors, and not only in the expert literature.

The list of individual schools is fairly long. Generally, we can distinguish three main groups of psychological theories:

1. **Environmentalism theories** see the effects of the external environment as the determinant of the development of the human psyche. They overestimate the importance of learning and overlook the impact of hereditary predispositions. Behaviourism, the science of behaviour, was the main representative of this stream.
2. **Nativist theories** are based on the prerequisite that development is determined by innate predispositions and the environment has no major effect. Psychoanalysis is a typical representative of these theories.
3. **Interactionist theories** explain mental development as the result of an interaction between hereditary predispositions and environmental effects. Every human being has a certain innate potential forming a basis for personality development, but environmental effects also play a certain role in this development. Humanistic psychology is the main representative of these theories.

2.2 Behaviourism

Behaviourism (derived from the English word 'behaviour') understands psychology as the science of behaviour. It emerged in the USA early in the 20th century with John B. Watson being the author of this approach. He followed up on Bekhterev's learning about cerebral reflexes; its establishment was also affected by the experiments focusing on the regularities in the behaviour of animals performed by Thorndike and Pavlov at the turn of the 19th century.

Behaviourism criticised psychology being perceived as the science of the conscious mind (consciousness), as well as its basic method, introspection. Behaviourism said that psychology must only study human behaviour. It simplified the paradigm of psychology into a stimulus-reaction scheme (S-R). The study of internal mental processes (lived experience) is impossible, because it is subjective. Like every science, psychology must be based on objective observation bringing controllable knowledge.

Watson was, among other things, convinced that with conditioning, a child could be educated into anybody upon request.

The main contribution of behaviourism was that its efforts to make psychology scientific encouraged the development of the experimental method. However, it attempted to reach this objective by reducing the subject matter of psychology to the study of behaviour. By ignoring the study of lived experience, behaviourism also abandoned any deeper understanding of the psyche.

Scientists soon realised that behaviourism could not hold in its original form. **Neo-behaviourism** sought to overcome this simplification. Its author, E.C. Tolman (1932 in Nakonečný, 1998b), changed the S-R scheme to the S-O-R scheme (inserting 'organism' between 'stimulus' and 'reaction' as a complex of intervening variables co-determining the impact of stimulation on reaction). It changed the subject matter of research from original reflexes (functional units of behaviour) to acts of behaviour (as the bearers of a certain meaning). Learning remained the main domain.

2.3 Psychoanalysis; A. Adler, C.G. Jung

As another influential theory of the early 20th century, **psychoanalysis** was defined by its founder, Sigmund Freud (born in Příbor in Moravia), as the 'science of the unconscious mind'. For this definition, its author used the study of hysteria on which he worked with J. Breuer, as well as the opinions of the French psychiatrists J. Charcot and Janet. They assumed that hysteria was the result of suppressed affections that were 'transformed' into unconscious symptoms.

Psychoanalysis was originally based on Freud's approach to neuroses as reactions to suppressed affections induced by conflict situations, especially by sexual frustrations. Freud was convinced that the period of the strait-laced Victorian morals he lived in was the sexual origin of all neuroses.

Freud differentiated two main energy sources in an individual's mental life. The destructive death instinct (thanatos) he associated with aggressiveness. Sexual energy (libido) forces an individual to reach delight, but keeps encountering obstacles and prohibitions. An individual is limited by family and school education, by public opinion, morals, religion and rules of law. Libido's focus develops in early childhood and undergoes several stages: oral, anal and latent genital. This means that the source of delight is gradually vested in the mouth, anus and genitals, and in the activities connected with these organs, i.e. sucking, defecation and sexual activities. Libido can get stuck in one of these stages due to the frustrations affecting

the individual developmental stages. This fixation then determines the type of character.

In psychoanalysis, an individual's personality structure has three layers with different functions:

A) Id, being the centre of unconsciousness, instincts and passions, especially sexuality.

B) Ego, representing an individual's conscious experience. The ego strives to maintain a balance between the id and superego, which are subjected to permanent tension and conflicts of passions and morals.

C) Superego, representing conscience. It is the result of education, commands and prohibitions.

That means that an individual's character (personal morals) is reflected in the personality layer called the superego. The period around the fourth year of life is an important moment for its development. This age usually establishes strong ties to the parent of the opposite sex who carries the elements of unconscious sexuality, i.e. the Oedipus complex in boys and the Electra complex in girls. The child feels the parent of the same sex as a rival. In addition, there is also a tension between this complex and the superego. The way an individual later copes with this complex is a significant determinant of his/her character.

The ego can apply so-called defence mechanisms to protect itself from any jeopardising thoughts or wishes that cause anxiety (superego reaction). Defence mechanisms are unconscious strategies used by people to cope with negative emotions, in particular with anxiety. Freud's daughter Anna Freud further elaborated on the theory of defence mechanisms (for details, see Chapter 6).

Although Freud's theory may seem one-sided today, through his discovery of defence mechanisms, the basic principles of personality dynamics, and the importance of the unconscious mind he greatly enriched psychology.

The diagnostic and psychotherapeutic method has been gradually expanded to include the theory of the human psyche, the theory of art, culture and sociology, and Sigmund Freud became one of the most influential representatives of psychology. A large group of psychologists focusing on psychoanalysis had formed around Freud in 1902, but some of his followers later split with him. The most significant followers include Carl Gustav Jung and Alfred Adler who elaborated their own remarkable theories based on psychoanalysis.

The Austrian physician Alfred Adler was the founder of **individual psychology**. Unlike Freud, he believed that personality development was mainly driven by the conflict between efforts to excel (desire for power) and a social feeling. According to Adler, human beings are naturally good, desiring cooperation and good relationships with other people. However, the inferiority complex often develops in childhood as a result of various bodily handicaps (Adler alone was handicapped in his childhood).

Desires to overcome the feelings of inferiority then unconsciously affect an individual's 'social character', 'lifestyle' and 'life plan', and can lead to various complications in respect of the three basic tasks of human life: work, social relationships and love.

The sibling constellations in which an individual grows up were also an important factor in personality development, according to Adler (experience and problems arising out of the position of the oldest, youngest and middle sibling; or the position of the only child).

Other material facts in Adler's learning are reflected in the following quotation: '*A man is not pushed from the back, but pulled forward, to the future. It is not by an external force, however, but by himself. All acts and feelings, all qualities and character traits, serve the one and only purpose: to be integrated in the human community.*' (Dreikurs, 1937 in Nakonečný, 1998b)

Adler's theory was far from getting the reception classic psychoanalysis did, not even when reformed into neo-analysis, which similarly to Adler placed an emphasis on the social origins of mental problems (E. Erikson, E. Fromm). However, it served as an inspiration for the study of various sociobehavioural disorders for many schools.

Carl Gustav Jung was one of Freud's best students. However, he later opposed Freud's one-sided approach to the libido and developed his own concept of the human psyche, **analytical psychology**. Its key conception was based on the '**collective unconsciousness**'. It is an expression of even deeper spheres of personality: while with Freud, the conception of unconsciousness primarily means suppressed personal experience, Jung's collective unconsciousness in an individual's personality means the species-like experience and is therefore analogical to the species' instinctual equipment. The so-called **archetypes**, mankind's experience with key life objects and events (motherhood, womanhood, godhood, search and wandering, etc.), are the dynamic elements in the collective unconsciousness. Understanding this world of dark symbols is one of the prerequisites to the cognisance of the authentic self and the reaching of internal unity.

Invaluable is Jung's picture of personality as a system full of opposites that complement each other and are directed towards a complex, harmonious whole. These include: consciousness-unconsciousness; extraversion-introversion; thinking-feeling; and perception-intuition (fantasy). A one-sided way of life and pursuance of only one goal results in disharmony. The way to a more harmonious and internally richer life presumes better self-knowledge, a more versatile life and development of the less developed parts of personality.

It was also Jung who discovered the association experiment as a method of psychological assessment. Jung's theory has been criticised for its lack of scientism, but it has recently enjoyed a good deal of influence.

2.4 Humanistic Psychology

Humanistic psychology is regarded as the third force in psychology (after psychoanalysis and behaviourism). The humanistic psychology movement started in 1962 with the main representatives being A.H. Maslow, C.R. Rogers, R. May and J.F.T. Bugental. They held the view (affected in particular by phenomenological psychology and existentialism) that psychology should return to the problems of the human being.

Nakonečný (1998) quotes J.F.T. Bugental (1965) who formulated five postulates of humanistic psychology:

A human being as such is more than the sum of its components; it is a person, not an organism; 'the subject matter of humanistic psychology is the human being in its most human aspect./..., in what differentiates it most as a distinctive type of being'.

Human beings exist in the human environment: the distinctive nature of the human being is manifested through its permanently remaining in bonds with other people. It is primarily man in a social context.

Human beings are conscious. Consciousness, showing continuity, lies in the centre of human experience. They do not go from one isolated episode to another, but unconscious tendencies also intervene in their relationships.

Human beings have the option to choose with 'choice being an attribute of experience'. Human beings are aware of being 'participants in their own experience', which means they have the option to exceed the limits of the condition given by nature.

Human beings are intentionally active (with a conscious focus), because they have values and create. This gives meaning to their activities and they build their identity upon this. Both to keep and to change have meaning. Human beings desire both peace and excitement.

Self-realisation, realisation of the human being's possibilities and its creative essence, is the central topic of humanistic psychology. **Abraham H. Maslow** is known as the author of a comprehensive hierarchy of human needs. **R. May** analyses in detail the phenomenon of human love in the modern world. **Carl R. Rogers** is the author of the theory of personality development and change. In interpersonal relationships, he thought it was important to strive for understanding, acceptance of other people (including their shortcomings), and truthfulness. Sound self-valuation and self-education can develop only in such relationships.

Methodology was regarded as apparently the greatest weakness of humanistic psychology, because the majority of works of its authors have the nature of an essay. Despite this fact, it has become a highly recognised school providing new knowledge about healthy and highly self-realising individuals.

2.5 Phenomenological and Transpersonal Psychology; Gestalt Movement

Phenomenological psychology is primarily the psychology of lived experience. It is based on introspection, a method carried out by the psychologist on himself/herself. It studies various experiences of existence, describes phenomena and tries to understand and penetrate their phenomenal essence. Its author, E. Husserl, follows on the ideas of the German philosopher W. Dilthey who differentiated sciences into 'explaining' (natural sciences) and 'understanding' (psychology). Mental life cannot be identified with natural phenomena; its essence lies in the immediateness of lived experience. We explain through intellectual processes, but to understand, the joint influence of all mental forces is necessary. Understanding an individual sentence is based on the context of the whole. Phenomenology is not consciousness, but experienced being. Phenomenological

psychology has been criticised in particular for its subjectivism that does not result in a single interpretation of its issues.

Transpersonal psychology is regarded as the fourth strand after humanistic psychology, which it is based on. The subject matter of this 'transpersonal' psychology is the expanded consciousness ('super-consciousness'). It reacted to quantum-physics discoveries and to experiences with intoxications by various narcotics. It is based on the traditional Oriental, religious and mythic schools, using in particular their methods to induce changed conditions of consciousness (yoga, transcendental meditation, chakras, occultism, Buddhism, and other esoteric systems). According to the Czech psychiatrist Stanislav Grof, the leading representative of this school who later emigrated to the USA where he worked as professor, the conventionally perceived consciousness is problematic. Based on transpersonal experiences, one can induce feelings of expanded consciousness beyond the usual limits of the Self and the limits of space and time. These experiences are no longer regarded as mere manifestations of mental disorders. They provide a deep insight into the nature and sense of the spiritual dimension of 'consciousness'. People can retrieve experience from prenatal development, as well as experience of distant ancestors; they can experience unity with animals, plants and cosmic orbs.

Transpersonal psychology is developing within the New Age movement that strives for a new spiritualisation of reality. It is now only a set of hypotheses whose justification may only be proven in the future.

The Gestalt movement or holistic psychology (from the German 'Gestalt', meaning 'form', 'configuration') was a reaction to the trend in psychology inspired by physics to describe mental elements that could be formed into complex mental phenomena such as thinking, wanting, etc. Its main representative, M. Wertheimer, said in 1912 that the whole is something other than the sum of components it is composed of. The whole is an arrangement of parts in a certain configuration (Gestalt); it is a complex quality. A melody recognised as the same despite being played in different keys and on different musical instruments may serve as an example.

Mental processes act like wholes, which can be in particular easily observed in perception where elements, e.g. on the basis of proximity, sameness and other principles, are structured in certain wholes. However, this also applies to other mental processes. These authors say that mental processes are not determined by the grouping of elements, but are instead a process of structuring, creating wholes.

Figuratively speaking, lived experience and experience are built into predefined forms.

2.6 Cognitive Psychology

The fairly young **cognitive psychology** follows on the theory of information and research into cognitive processes and memory. It studies cognition and cognitive processes that are regarded as material parts of mental activities relating to the reception, maintenance and use of information. Other mental phenomena (e.g. emotions, motivation, etc.) are not absolutely neglected by the authors of this school, but they are regarded as second-rate phenomena activated by the cognitive elements.

In this sense, E.C. Tolman developed the cognitive theory of learning and motivation in 1948, J.R. Royce and A. Powell developed the cognitive theory of personality and individual differences in 1983, and U. Neisser (1966) is the author of the cognitive theory of behaviour. The other authors of cognitive theories include L. Festinger, P.V. Simonov and A.L. Baldwin. Cognitive psychology developed into 'cognitive therapy' based on the assumption that our experience is what we think about it and that our thinking is the key to our behaviour. This direction is undergoing rapid development now and is gaining influence.

At the end of the 19th century, psychology increasingly showed the trend of approximating the opinions of individual schools. Despite the fact that certain opinions are still denied, this variability of approaches can be of benefit, if they, for instance, focus on various aspects of the same problem. The still-existing conflicts expressing the imperfectness of our knowledge can thus be used to its benefit.



Review Questions

1. What is a 'paradigm'?
2. What do the nativist theories have in common and who was their representative?
3. What was the main contribution of behaviourism to psychology?



4. What is the difference between the behaviourist and neo-behaviourist theories?
5. What is the 'libido'?
6. What was the cause for neuroses according to Freud?
7. Which author thought it was important whether a man was born as an only child or a sibling in a certain order?
8. What are 'archetypes'?
9. Who is the author of the theory about the hierarchical arrangement of human needs?
10. Which school of psychology is characterised by subjectivism?
11. Name some representatives of cognitive psychology. What issue was at the centre of their interest?



Literature

ATKINSON, R.L. *Hilgard's Introduction to Psychology*. New York: Harcourt, Inc., 2000.

DRAPELA, V. *Přehled teorií osobnosti*. Praha: Portál, 1997. ISBN 80-7178-134-7.

HARTL, P., HARTLOVÁ, H. *Psychologický slovník*. 1. vyd. Praha: Portál, 2000.

HOCKENBURY, D. H, HOCKENBURY, S. E. *Psychology*, 5th Edition, New York: Worth Publishers, 2010.

KOSSLYN, S. M., ROSENBERG, R., S. *Introducing Psychology*. 4th Edition, Boston: Pearson, 2011.

NAKONEČNÝ, M. *Úvod do psychologie*. 1. vyd. Praha: Academie, 2003.

NAKONEČNÝ, M. *Základy psychologie*. 2. vyd. Praha: Academia, 1998a.

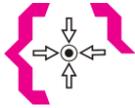
NAKONEČNÝ, M. *Encyklopedie obecné psychologie*. 1. vyd. Praha: Academia, 1998b.

NAKONEČNÝ, M. *Průvodce dějinami psychologie*. 1. vyd. Praha: SPN, 1995.

VÁGNEROVÁ, M. *Úvod do psychologie*. 1. vyd. Praha: UK, 1997.

3 CLASSIFICATION OF MENTAL PHENOMENA

ATTENTION



Objectives

After studying this chapter you will gain insight into mental phenomena and the rules for their classification. You will become familiar with one of the most significant mental phenomena, attention.



Terms to Remember (Key Words)

- mental phenomenon
- mental state
- mental process
- mental property
- activation
- states of consciousness
- quantitative changes of consciousness
- qualitative changes of consciousness
- attention
- concentration
- distribution
- tenacity
- vigilance
- orientation

3.1 Main Groups of Mental Phenomena

All manifestations of mental activities are generally referred to as '**mental phenomena**'. We can distinguish three groups of mental phenomena: mental processes, mental states and mental properties. **Mental processes** are highly variable processes that persist for relatively short periods of time. **Mental states** are temporary characteristics changing over time depending on various situations. They are aspects of the functional condition of an organism (especially of the brain). **Mental properties** are long-lasting and relatively constant characteristics of the human being that are preconditions for a greater number of activities.



Details are given in Table 2:

Mental processes include:	Mental states include:	Mental properties include:
<ul style="list-style-type: none"> ▪ cognitive processes <ul style="list-style-type: none"> ✓ perception ✓ memory ✓ learning ✓ images and fantasies ✓ thinking ▪ motivational processes ▪ emotional processes ▪ volitional processes 	<ul style="list-style-type: none"> ▪ activating level (activation) ▪ states of consciousness ▪ states of attention ▪ emotional states (moods) 	<ul style="list-style-type: none"> ▪ abilities ▪ personality traits ▪ temperament ▪ character
<p><i>Example:</i></p> <ul style="list-style-type: none"> ▪ <i>listening to music; imagining an ideal holiday; thinking during mathematic computations</i> ▪ <i>process of developing motivation to study</i> ▪ <i>joy, fear, stage fright, admiration, etc.</i> ▪ <i>endeavouring to pass an exam successfully</i> 	<p><i>Example:</i></p> <ul style="list-style-type: none"> ▪ <i>increased level of activation when an organism prepares for a certain performance (enhanced sensitivity of sense organs, changed hormonal level in blood, increased alertness of skeletal muscles, etc.)</i> ▪ <i>condition of deep unconsciousness (coma)</i> ▪ <i>concentration of attention</i> ▪ <i>calm vs. excited mood</i> 	<p><i>Example:</i></p> <ul style="list-style-type: none"> ▪ <i>musical abilities; verbal abilities</i> ▪ <i>extraversion vs. introversion; emotional stability vs. emotional instability</i> ▪ <i>fiery vs. calm temperament</i> ▪ <i>conscientiousness; persistence; self-respect</i>

Table 2: **Main Groups of Mental Phenomena** (freely according to Čáp, 1990)

However, we must remember that this is a simplified classification, as all mental phenomena are actually interconnected. Their common characteristics include (Kosslyn and Rosenberg, 2011):

- inter-individual distinctions (different individuals recall songs from their childhood with varying degrees of accuracy; we all have different external manifestations of how we experience joy or sadness);
- engagement in activities (playing, learning, working activities and hobbies);
- dependence on the condition of the central nervous system, as well as on the societal impact;
- development and variability during the course of life (except for mental properties).

3.2 Mental States

Mental states are temporary characteristics changing over time depending on the situation, and they are related to the general state of the organism (especially of the brain). The most important mental states include:

- the activating level (activation);
- the states of consciousness;
- the states of attention;
- the emotional states (moods).

The activating level (activation) is the general condition of an organism, in particular of the CNS, displayed in various degrees (low-lowered-middle-increased-high activation).

- The sleeping condition is the **low activation**. *For instance, it is manifested through slower breathing and heart activities and relaxed muscles.*
- The **lower activation** is the transition between vigilance and sleeping. *We experience it when we fall asleep, after we wake up and if we are exhausted. Movements are slowed, less accurate; attention is worsened.*

- The **middle activation** is the condition when various activities can be performed well. *In this condition, we feel fresh and can concentrate easily.*
- The **increased activation** is accompanied by the higher tension that is necessary to prepare an organism for a demanding performance. *It is manifested through increased attention, stronger sensitivity of the sense organs, a changed hormonal level in the blood, and the greater alertness of the skeletal muscles. These are in fact changes present during fierce emotions (affects and passions). They are caused by the sympathetic nervous system depending on the hypothalamus and the limbic system. The parasympathetic nervous system resumes the previous condition of the organism.*

The **states of consciousness** are represented by quantitative and qualitative changes in consciousness. **Qualitative changes** depend on the extent of vigilance. This extent can range from full **lucidity of consciousness** and mental clarity through relaxed vigilance, dim consciousness and sleepiness (**somnolence** and **sopor**) to full unconsciousness (**coma**), where an individual cannot be woken up and does not react to painful stimuli. **Qualitative changes** include sleep and hypnosis.

3.2.1 Attention

Attention is a mental state facilitating a human being's concentration on a certain object or phenomenon for a certain period of time. It is a formal mental feature always related to a certain realised content and state of activation.

From the phylogenic perspective, attention has developed from an innate, orientation-investigative reflex that can be seen in animals. *An orientation reaction is a manifestation of the readiness to react to an unusual, sudden or unusually intense stimulus that can be jeopardising. Common and well-known stimuli as such do not attract our attention.*

Attention activities also depend on an individual's internal tuning. *If a human being feels endangered for some reason, he/she will be more sensitive to various stimuli. This even includes stimuli that go unnoticed under normal circumstances, but that are suddenly interpreted as endangering with regard to the individual's mental state.*

The ability to react by concentrating attention is based, as we have already said, both on the **need for security and safety** and the **need for orientation in the environment**, i.e. curiousness. The human being in general tends to cognise and learn. Attention is one of the **mechanisms that regulate mental activities**. *For instance, it stimulates movement activities as a reaction to an affecting stimulus.*

There are **two basic forms of attention** from the developmental perspective:

- **Spontaneous attention** is based on an orientation reaction and is induced and attracted by stimuli that are significant for an individual as such for a certain reason. This form of attention primarily serves for basic orientation in one's usual environment when it is necessary to react to new or unusual stimuli, because they could represent important information. It is of major importance in the first years of life but is not sufficient at school age. A more mature regulation of attention than the attractiveness of the stimuli is necessary at this age. Still, the attraction of attention is not absolutely dependent only on the qualities of the external stimuli even at this level. At this level, attention is selective (with personal experience of and preferences for certain stimuli also playing a certain role). If it were absolutely non-selective, it would be pathological. *This can be seen, for instance, in children with an organic brain disease, e.g. minimum brain dysfunction. The selection of an appropriate object can also be triggered by certain images that are preferred and expected based on previous experience. For instance, a mother can recognise her child's cry and is more easily attracted by it than by the manifestations of another child.*
- **Intentional attention** is preconditioned by a previous decision made for a certain stimulus. As the stimulus does not attract attention as such and does not satisfy any need of the individual, attention is maintained by will. This form of attention is a mere means to a certain satisfaction and develops later in childhood, in particular through upbringing. It is necessary at school, because there are often situations when the goal is desirable, but the activity leading to reaching this goal is difficult.

Attention can also be defined by various **qualities**. These include:

- **concentration**, i.e. intensity of concentration;
- **scope of attention (distribution)**, determined by the number of stimuli (or activities) on which an individual is able to concentrate at one time. The distribution of attention is related to the type of

temperament and general personality orientation. *For instance, an introvert has difficulties distributing attention but is better in concentration whereas an extravert is willing to do several activities at the same time but concentration is rather superficial.*

- **Tenacity** expresses the ability to maintain attention for a certain period of time. After this time expires, attention naturally fluctuates.
- **Vigilance** is the ability to transfer attention from one stimulus to another. This flexibility is again related to the type of temperament and personality orientation. Vigilance is directly proportional to the distribution of attention.

*The inability to promptly transfer attention to something else is referred to as **absent-mindedness**. This quality can be seen to an increased extent in certain people such as scientists who concentrate on a creative assignment, but also in children and adults consumed by a hobby or current problems. Manifestations of absent-mindedness include, for instance, answers given before a question is asked, or constant searching for things because their location has been forgotten.*

- **Orientation** is related to the object of attention. Our attention is usually attracted by what we need, what we are interested in, or what is related to the goal that we are pursuing. **Short-term orientation** means, for instance, that I buy what I need. In addition, there is also a tendency towards **long-term or even lifelong orientation** leading to the fulfilment of one's main life objectives and values. The Georgian psychological school (D. Uznadze) called lifelong orientation '**ustanovka**' ('set').

Differences among individuals are manifested in particular:

- **in the extent** (how many objects at one time)
- **in the stability** (for how long)
- **in the transfer and distribution** (how quickly it is transferred and whether two different activities can be performed at the same time)

The quality of individual attention properties is affected by many factors. The **objective factors** include:



- **the qualities of the stimuli** attracting and maintaining attention, *e.g. size, contrast, colour intensity or movement;*
- **the cognitive factors** that can contribute in various ways; *the ease of identifying a stimulus and understanding a situation is good for attention while monotony has a negative impact.*

The **subjective factors** affecting the states of attention include:

- the innate predispositions of the type of higher neural activities;
- age;
- volitional qualities, motivations;
- the current condition, needs and attitudes, both at the conscious and unconscious level. *They are, for instance, used in advertising when they target the latent motives and desires that potential customers may have;*
- an individual's personal experience, habits and past emotional experience;
- tiredness and exhaustion.



Review Questions

1. Please name the main categories of mental phenomena and explain the primary differences.
2. What does 'activation' mean and how many degrees can it have?
3. What are quantitative and qualitative changes in consciousness?
4. Why is attention important for our mental activities?
5. Please name the most important properties of attention.
6. What does 'absent-mindedness' mean?
7. In which properties of attention do people most frequently differ from each other?
8. Which objective and subjective factors affect the states of attention most?



Literature

- ATKINSON, R. L. *Hilgard's Introduction to Psychology*. New York: Harcourt, Inc., 2000.
- HARTL, P., HARTLOVÁ, H. *Psychologický slovník*. 1. vyd. Praha: Portál, 2000.
- HOCKENBURY, D. H., HOCKENBURY, S. E. *Psychology*, 5th Edition, New York: Worth Publishers, 2010.
- KOSSLYN, S. M., ROSENBERG, R. S. *Introducing Psychology*. 4th Edition, Boston: Pearson, 2011.
- NAKONEČNÝ, M. *Úvod do psychologie*. 1. vyd. Praha: Academie, 2003.
- VÁGNEROVÁ, M. *Úvod do psychologie*. 1. vyd. Praha: UK, 1997.

4 COGNITIVE PROCESSES



Objectives

After studying this chapter you will gain insight into the cognitive processes. You will become familiar with the process of perception. You will understand its importance to an individual's psyche; you will learn about the reflex arc and the regularities of structuring perception.



Terms to Remember (Key Words)

- cognitive system
- analyser
- receptor
- centripetal nerve
- centrifugal nerve
- sensation
- percept (impression)
- Gestalt laws
- sensory illusions
- illusion
- hallucination
- threshold
- differential threshold
- sensory adaptation

4.1 Cognitive Processes

The word **cognitive** originates from the Latin 'cognoscere' (to cognise; 'cognitio' meaning 'cognition' or 'a piece of knowledge'). What this means is that **cognitive processes** are the processes through which human beings primarily cognise the surrounding world and their selves. Through the cognitive processes, an organism obtains information (perception), retains it (memory, image) and analyses it (thinking). However, the cognitive processes are also involved in many other situations: in activity management, communication with others, realisation of emotions, conflict resolution, decision-making, and realisation of defined goals.

The term **cognitive system** appears in relation to the cognitive processes. It emphasises the mutually close relation of all the cognitive processes. This open system that constantly actively supplements human cognition includes:

- perception
- memory
- learning
- imaginative processes (imagination and fantasy)
- thinking related to speech and problem-solving
- attention

The individual processes will be detailed below. The learning processes are omitted, because they are dealt with in detail in educational psychology. The topic of attention was described in the previous chapter together with the mental states.

4.2 Perception

Perception is a cognitive process that captures what is presently stimulating our sense organs.

The entire process of perception goes on in an **analyser**. The analyser contains **receptors** (sensory nerve cells located in the sense organs), **centripetal (afferent) nerve pathways** and the **respective brain centre** for the given sensory modality. The sense organ's receptor receives a stimulus that is transformed through **transduction** into an impulse. The impulse continues through the **centripetal pathways** to the specific **brain centres** that further analyse the sensory information.

Every sense has its respective centre in the brain that helps us realise the stimuli both around us and inside our organism. The sight centres can be found in the occipital lobes; the hearing centres are in the temporal lobes; the gustatory centres are located in the parietal lobes; the olfactory centre is in the temporal lobe, and the feelings of hot, cold and pain are intermediated by the parietal lobes where the core centre of the skin analyser is located.

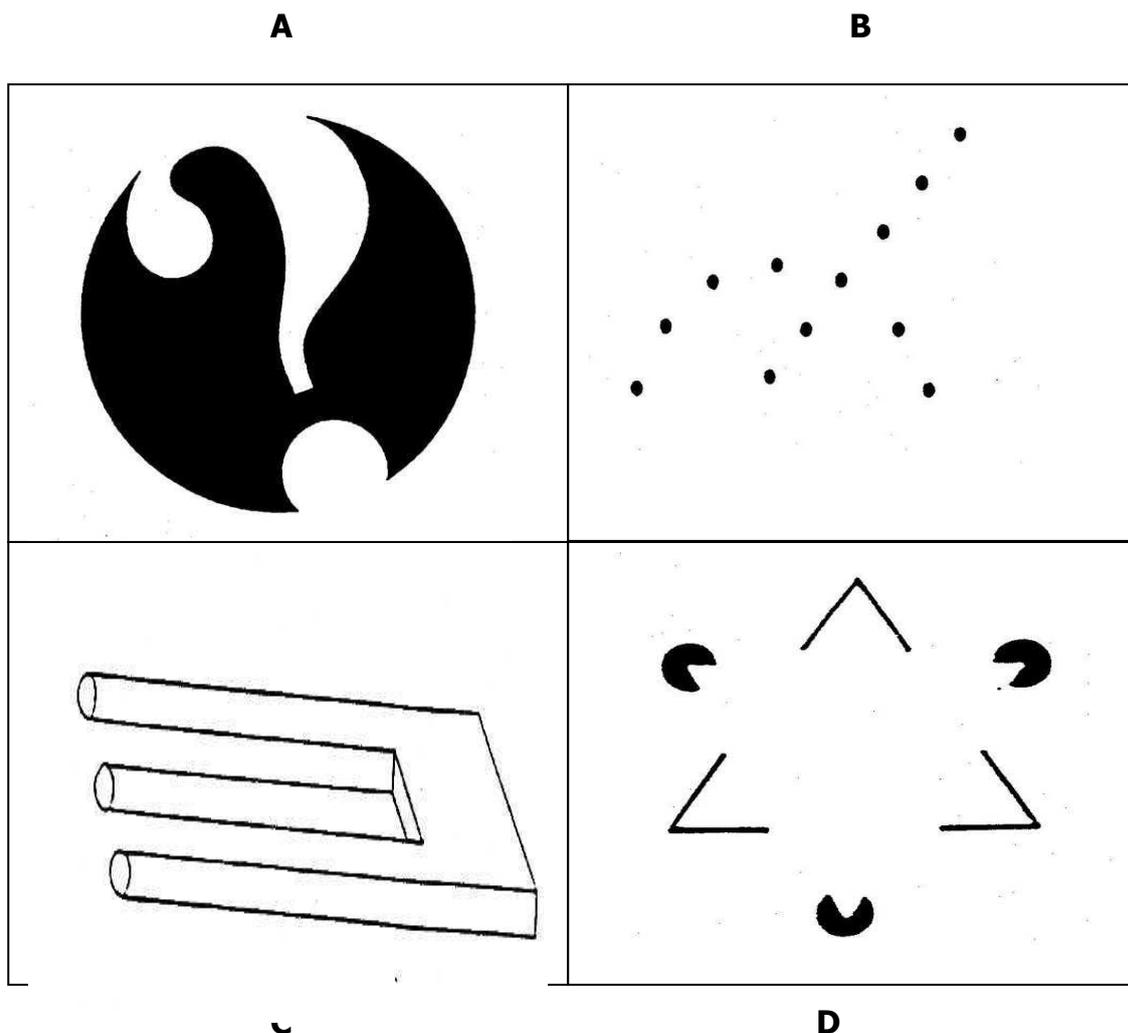
Should we consider the environment where the perceived stimuli are located, we can distinguish **exoreceptors, which** register the stimuli from the outer environment (olfactory, gustatory, hearing, skin – touch, heat, pressure, pain), and **endoreceptors**, which work in an organism's internal environment (so-called **proprioceptors** in the muscles and ligaments, which enable perception of the movements, location, tension and balance of various parts of the human body, and receptors in the walls of internal organs).

Traditionally, there were two types of experiences distinguished in perception: **sensations** and **impressions (percepts)**. A sensation was understood as an image of a certain individual characteristic of the object perceived (e.g. the sensation of a slightly sour taste). An impression (percept) was an image of an item or a process as a whole (e.g. the impression of an apple). However, in line with Gestalt psychology's approach, the majority of psychologists are currently inclined to think that sensations do not usually exist separately; they are just artificially differentiated parts of more complex impressions. Representatives of Gestalt psychology have proved in their research that the whole is a specific structure which is much more than the mere sum of its components. *However, terms such as sensation, sensing and 'sensoric' have not completely disappeared from expert publications yet. 'Sensing' is usually understood as the process of obtaining information and its transformation into neural impulses, while the term 'perception' is often connected with the process of organising and interpreting sensory information (Plháková, 2003).*

Gestalt psychologists have discovered a range of regularities in perception that are applied to the structure and organisation of perception. The Gestalt laws of grouping show that impressions are images of a certain whole although some components of the whole cannot be perceived.

- The **principle (law) of figural organisation** expresses the tendency to divide the perceptual field into a **figure**, a dominant image, and a **background**, i.e. everything else helping orientation.

- The **principle (law) of temporal or spatial proximity** is related to the closely located components that tend to group and create a whole.
- The **principle (law) of generalisation** is about perception of the same shapes creating the impression of a whole. *For instance, this is the way we perceive a straight line composed of dots.*
- According to the **principle (law) of closure**, the impression of the whole develops from what is enclosed within a border in a certain way, e.g. with contours.
- The **principle (law) of good form** refers to the tendency to overlook minor disproportionalities and perceive forms of similar shapes as full although they are actually not.
- The **principle (law) of perceptual constancy** describes the tendency to perceive relatively similar elements as constant. It reflects the developmental level of cognition. A child perceives a certain object as constant (of the same size and shape) even though it is different (Vágnerová, 1997).



Scheme 4: **Examples of Perception Organisation According to Gestalt Principles** (A – reversible figure, B – principle of generalisation, C – image of an unreal object perceived from a certain perspective, D – principle of good form)

Sensory illusions can also be explained using Gestalt principles. These are perceptual deviations represented as inaccuracies resulting from a certain configuration of stimuli that we perceive as an illusion. Sensory illusions most frequently reflect a wrong interpretation of perspective or multi-significant images. *For instance, we perceive a stick dipped into water as a broken stick.* We cannot fight the experiences resulting from sensory illusions, despite our knowledge.

Illusions are another form of distorted perception. The impression is deformed as a result of a certain present mental state, most frequently under a certain emotional tuning. *For instance, a column at dusk can seem like a man's figure as a result of fear.*

Hallucinations have a different quality than illusions, as they arise as false impressions without any stimulus affecting our senses. These experiences are not common in healthy people; they are a serious psychopathological symptom typical of certain mental disorders (psychoses, schizophrenia). Hallucinations can also accompany brain intoxications (with drugs, alcohol) and sensory deprivations.

The perception process can have some typical characteristics:

- **Individually specific orientation and selection of the reality perceived.** Every individual focuses on certain aspects of reality, making a conscious or unconscious selection, depending on habits, previous experience, needs and motives.
- **Individually specific analysis of the information perceived.** Every individual also analyses the information perceived in 'his/her' way in line with the level of knowledge and competences achieved and with previous experience.
- **Constancy – the relative stability in the perception of sizes, shapes or colours** can be, for instance, seen in the fact that we can recognise someone we have not seen for 10 years by his/her facial features.
- **The presence of thresholds:** The **lower threshold** is the smallest size of the stimuli causing a sensation. The **differential threshold** is the smallest difference of stimuli of the same sort that we can distinguish.
- The long-term effects of a certain stimulus reduce the threshold, which we refer to as **sensory adaptation** to a stimulus.
- If the intensity of a stimulus increases, the size of the impression grows quickly at first, and then more slowly.

Perception closely interacts with other mental processes. The sensory image of reality is further transformed and interpreted within our current life context. Intellectual faculties (abilities) are crucial for analysing the information perceived. This means that perception is closely related to thinking. However, there is a marked difference between the two processes: Since perception is tied to the present and therefore cannot be reversed, it is highly subjective and dependent on the current condition of an individual. Thinking, in contrast, is not influenced as much by an individual's subjectivity thanks to its reversibility.



Perception helps us orientate in our environment. Such information obtained this way subsequently affects our behaviour, which makes perception act as a regulatory mechanism as well.



Review Questions

1. What is the cognitive system and what is the difference between the 'cognitive system' and 'cognitive processes'?
2. Can you explain the difference between a sensation and an impression (percept)?
3. What is the Gestalt principle applied to structural perception?
4. What are 'sensory illusions' and how are they different from illusions and hallucinations?
5. Please give an accurate description of an analyser.
6. Where is the sight centre located in the brain?



Literature

ATKINSON, R. L. *Hilgard's Introduction to Psychology*. New York: Harcourt, Inc., 2000.

HARTL, P., HARTLOVÁ, H. *Psychologický slovník*. 1. vyd. Praha: Portál, 2000.

HOCKENBURY, D. H, HOCKENBURY, S. E. *Psychology*, 5th Edition, New York: Worth Publishers, 2010.

KOSSLYN, S. M., ROSENBERG, R. S. *Introducing Psychology*. 4th Edition, Boston: Pearson, 2011.

NAKONEČNÝ, M. *Úvod do psychologie*. 1. vyd. Praha: Academie, 2003.

VÁGNEROVÁ, M. *Úvod do psychologie*. 1. vyd. Praha: UK, 1997.



5 MEMORY



Objectives

After studying this chapter you will understand the significance of memory for the human psyche. You will get to know the individual stages of the memory process and the principles of effective encoding of information.



Terms to Remember (Key Words)

- encoding
- retention
- reproduction
- sensory memory
- short-term memory
- long-term memory
- mnemonic device
- memorising
- semantic encoding
- proactive inhibition
- retroactive inhibition
- implicit memory
- explicit memory
- episodic memory
- semantic memory
- transfer
- confabulation

Memory is the function which enables the retention of experience and information about the surrounding world and about one's self in relation to this world. There can be different types of information. This means that memory can contain feelings, verbally and sensorially presented information, motives, evaluations, and methods of problem-solving, as well as various motor and sensory activities.

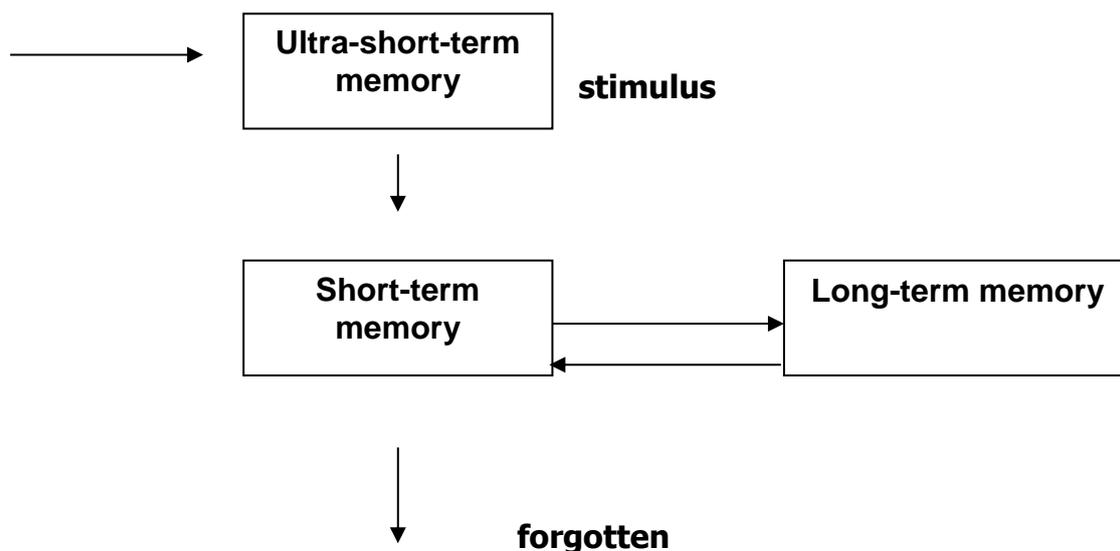
Memory **has no actual content**; it is a function connected with other mental processes – whether cognitive or emotionally regulatory processes. Memory is very important. Without memory we would be unable to do normal mental work, which is apparent from certain diseases related to severe memory disorders. *Alzheimer's disease (dementia) is probably the best known example from practice.*

Memory includes all activities related to the storage, retention and retrieval of past information. It has, *inter alia*, **three** stages that follow one after another: **inculcation (encoding), retention and retrieval.**



- **Inculcation (encoding)** means the transformation of information into a form that can be stored in memory. The transformed image of the object, person or phenomenon perceived and stored in memory is called a **mental representation** (Plháčková, 2003). Our experience can be encoded in memory in three different ways: **as words, images or movements**.

Considering the period for which the information is retained, we can distinguish three memory systems: **sensory (ultra-short-term) memory, short-term memory, and long-term memory** (see Scheme 5):



Scheme 5: **Course of the Memory Process** (freely according to Nakonečný, 1998b)

Sensory (ultra-short-term) memory retains accurate information from our senses for a very short period of time. In this time interval (less than one second with visual information or several seconds with auditory information), we decide whether the information we perceive is important for us. The necessary information is transferred to short-term memory while everything not needed is forgotten. *We are walking in the street and perceiving many acoustic stimuli. Suddenly, we set our focus on a person shouting: 'WATCH OUT!' This information moves from sensory memory to short-term memory at the moment we realise that this is a warning signal.*

Short-term (operational or working) memory is a system that can keep the information necessary for our mental activities for a short period of time (usually 15–30 seconds). It is usually compared to a sort of a 'working board' that contains what we are currently analysing and what we are currently concerned with. *An example of short-term memory can be seen in a situation when we want to call someone whose phone number we do not know. After searching for the number in the phone directory, we can remember the number until the moment we dial it, and then our attention concentrates on the call. Then the number is forgotten forever.*

This system's capacity ranges **from five to nine** meaningful information units of any sort regardless of their content. This means that we can remember a list of a larger number of words, but on the condition that we group these items into five to nine meaningful units (Plhánková, 2003). So-called **mnemonic devices** are

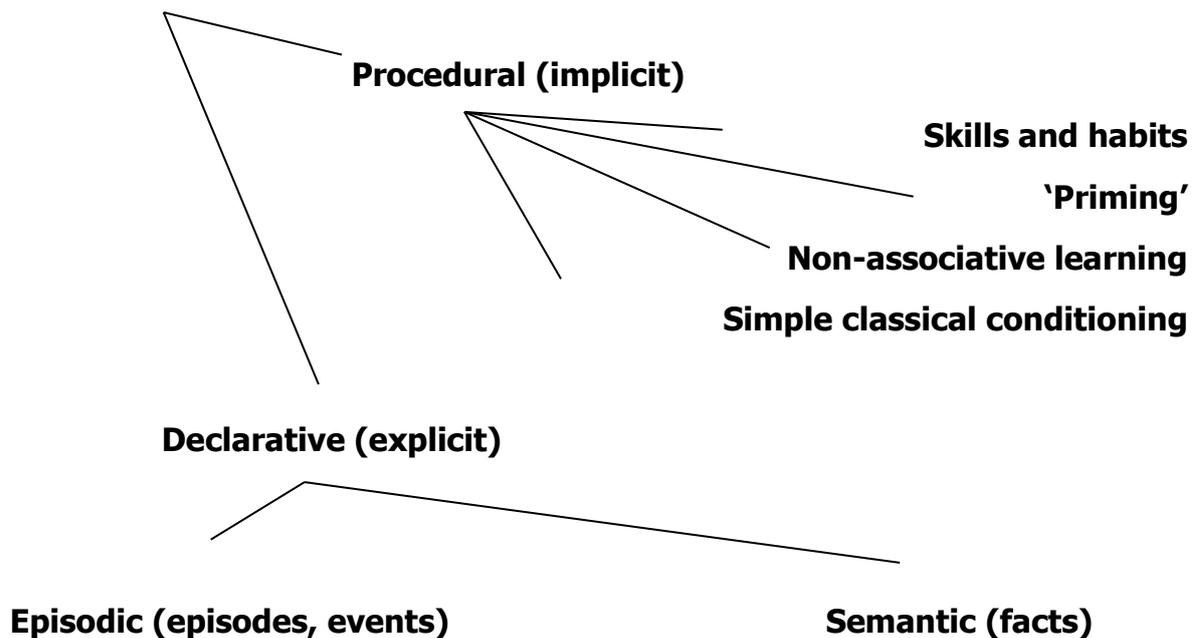
another method that can be used to increase the capacity of short-term memory. They also ease the storage of information in long-term memory.

Long-term memory is a relatively passive system with an unlimited capacity that can retain stored information for a very long period of time, sometimes even during an entire lifetime. Long-term memory not only stores the information intermediated by our senses, but also the content (thoughts, feelings, images or dreams) from our internal sources. The information is stored **intentionally** or **unintentionally**. **Mechanical repetition** ('**memorising**') is a manner of inculcation into memory that we use in learning new words in a foreign language, for instance. However, this is not a very effective method with respect to the durability of the memory records. **Semantic encoding** is much more advantageous, as we interconnect individual pieces of information to form a meaningful whole.

Scientists assume that long-term memory sorts huge amounts of data in a certain way (see Scheme 5). We distinguish two main subsystems, **explicit** and **implicit** memory. **Explicit** (or **declarative**) **memory** contains information that can be verbally described and that we have realised when storing it in our memory. In contrast, **implicit memory** is a reservoir of data that is difficult to communicate verbally and that can be inculcated unconsciously. These memory subsystems, too, can be divided up into several components in terms of their content. Explicit memory can be subdivided into **episodic memory** whose content is autobiographically tied to subjective experience and experiences. *For instance, episodic memory enables us to remember what we wore on our first day of school or who gave us our first kiss.* **Semantic memory** refers to knowledge of factual information. *For instance, we know that one hour has 60 minutes; we know the rules of English grammar, etc.*

Implicit memory has several components that are activated by different regions of the brain. They include **sensitisation** ('**priming**'), i.e. a kind of enhanced sensitivity to relatively new stimuli. **Procedural memory** is responsible for the formation of skills and habits. Implicit memory also includes **simple classical conditioning** and **non-associative learning**, i.e. activation of reflex pathways.

Long-term memory



Scheme 6: **Organisation of Data in Long-term Memory** (freely according to Kandel, 1999, in PlhÁková, 2003)

In healthy people, the processes going on in explicit memory supplement each other and are jointly involved in learning and memory retrievals. In many situations, we simultaneously use information from multiple memory subsystems.

- **Retention of information in memory** means the process of retaining the encoded information in memory for varying periods. However, it cannot be regarded as a passive process, since the content of long-term memory is analysed and categorised within a new context.

We have already said that information can be encoded in different ways, which also results in a different quality of retention. Important information is **analysed (encoded) so that it can be easily retrieved and reproduced**. The personal importance of information is based on: **motivation, personal needs or a combination with a stronger emotional experience (or anticipation thereof), as well as on a rational evaluation** and possible usefulness in the future. Certain needs are also fulfilled in this respect, e.g. the need for orientation and meaningful learning or the need for self-realisation.

Mechanically inculcated or emotionally neutral information mostly seemingly disappears from memory. Its encoding is not usually supported by any bond,

rational analysis, necessity or emotional significance. It cannot be retrieved, i.e. decoded.

When information is inculcated, the phenomenon dubbed as **transfer** can emerge, i.e. the learning of new things is made easier thanks to the use of the existing memory traces containing information having a certain relation to the new things learned.

- **Retrieval (reproduction)** is the process of decoding the information stored in memory. It can have two basic forms, including spontaneous retrievals and recognition. **Spontaneous retrievals** involve reproduction without any cues. **Recognition** involves retrievals coming during repeated perception of the same phenomenon that brings back memory traces and stimulates retrievals of additional details.

During reproduction, we tend to more easily reproduce information in meaningful wholes rather than confused content taken out of context. This is why we actively analyse (**reconstruct**) such information when retrieving it from memory so that we add probable data in the empty gaps in our memory. The information retrieved is thus usually not an absolutely identical copy of the information remembered; it is more or less inaccurate, containing invented information (**confabulations**) and omitting or confusing some contexts.

The loss of the ability to reproduce what one has experienced is identified as **forgetting**. One of its causes is the disintegration of the memory traces that are not exercised. This frees up memory space to create new connections. In purposeful forgetting, we remove unnecessary content from memory, thus protecting our psyche from overloading. So-called **memory inhibition (interference)** is another cause of forgetting, **where the information stored in memory is mutually disturbed** and is therefore hard to retrieve. We distinguish **retroactive inhibition** if the retrieval of the information previously acquired is disturbed by new information. The more the new knowledge resembles the old, the more negative its influence. In **proactive inhibition**, the previous information is disturbed by the inculcation of the new knowledge. According to theories based on the teachings of Sigmund Freud, causes of forgetting can also include the unconscious suppression of traumatic experiences (**repression**). *For instance, when a rape victim 'forgets' about the occurrence of this act.*

The selection and modification of information works at all levels of the memory process. Memory is based on a certain analysis, interpretation and transformation of experience. The quality of memory processes is affected by:



- **the organism's physical condition**, especially by tiredness, aging or disease conditions, primarily in the brain tissue;
- **the mental condition**, i.e. the condition of the other mental functions, primarily other cognitive processes and the level of activation;
- **external events** such as time cycles (day and night), atmospheric effects or seasons, as well as social factors (group opinion, generally valid attitudes, group pressure);
- **the qualities of the information to be remembered**, its extent and character, the possibility of mutual interconnection of individual pieces of information, the time interval available for its acquisition, the individual significance of the memory material, its connection with an emotional experience, etc.



Review Questions

1. Please name the stages of the memory process.
2. Which principles are applied to select the information to be remembered?
3. Please name and describe the individual types of memory.
4. Which mechanism is applied in forgetting?
5. What does 'transfer' mean?
6. What are 'confabulations'?
7. What are mnemonic devices used for?
8. Under which conditions is it easier to retrieve content from long-term memory?



Literature

- ATKINSON, R. L. *Hilgard's Introduction to Psychology*. New York: Harcourt, Inc., 2000.
- HARTL, P., HARTLOVÁ, H. *Psychologický slovník*. 1. vyd. Praha: Portál, 2000.
- HOCKENBURY, D. H, HOCKENBURY, S. E. *Psychology*, 5th Edition, New York: Worth Publishers, 2010.
- KOSSLYN, S. M., ROSENBERG, R. S. *Introducing Psychology*. 4th Edition, Boston: Pearson, 2011.
- NAKONEČNÝ, M. *Úvod do psychologie*. 1. vyd. Praha: Academie, 2003.
- VÁGNEROVÁ, M. *Úvod do psychologie*. 1. vyd. Praha: UK, 1997.

6 IMAGINATIVE PROCESSES



Objectives

After studying this chapter you will become familiar with the details of the imaginative processes. You will learn to distinguish images from fantasies and will become familiar with the principles of fantasy production.



Terms to Remember (Key Words)

- | | | |
|-------------------------|--------------------------|------------------|
| ▪ imagination | ▪ agglutination | ▪ syncretisation |
| ▪ fantasy | ▪ schematisation | ▪ symbolisation |
| ▪ memory image | ▪ stylisation | ▪ animism |
| ▪ eidetic imagery | ▪ hyperbolisation | ▪ magism |
| ▪ laws of association | ▪ creative fantasy | ▪ brainstorming |
| ▪ mental representation | ▪ reconstructive fantasy | ▪ daydreaming |

Despite not all psychologists widely accepting it as an issue worthy of expert interest, the role of imagination in human life is indisputable. This can be seen by the recently growing popularity of literary and film works based on fantasy, such as the Harry Potter stories.

Fairy tales have always been a part of the children's world, and they are also popular with adults. The method of directed imagination is used in psychotherapy. Psychology traditionally distinguishes two imaginative processes – **imagination** and **fantasy**.

6.1 Imagination

Imagination is a mental process resulting in the creation of **memory images**. They are also called mental representations, i.e. reproductions of a previously perceived object or process not currently affecting one's sense organs. In contrast to **impressions**, which originate in the activities of the sense organs and create an impression of weight, an **image** is of a central origin (developed without any direct involvement of the senses); it is usually incomplete, without any details. Images can contain products of all the sensory modalities (visual, auditory, gustatory, olfactory, tactual images, images of movement, etc.).

Eidetic images are a special form of images that are similar to impressions thanks to their sharpness, speed and easiness of retrieval. Only certain individuals ('eidetics') have the ability to create images of this sort. The increased ability to produce eidetic images is typical of children and is lost during adolescence. In adults, this ability is most frequently associated with photographic memory that is applied in the reproduction of text.

The associationists formulated principles under which the mental content of the mind is associated and grouped. If we are consciously concerned with certain content, we also normally recall the image associated with this content in our mind. Below are the basic laws of association (Plháčková, 2003):

- According to the **law of similarity**, we normally recall an image of another sort of fruit when looking at an apple.
- The **law of contrast** can be seen in a situation where an image of youth is associated with an image of old age.
- The **laws of touch in space and time** consist in the existence of associations of images created in the same place or at the same or consequent moment.

- According to the **law of causality**, we can recall the cause of a certain phenomenon when we imagine or perceive it.

Images are important to us due to their ability to create certain internal images (**'mental representations'**) of the phenomena present in the outer world. The imaginative process is usually compared to the process of a child's game, i.e. it is normally accompanied by the creation of experiences. Imagination also makes it possible to supplement impressions based on previous experience, i.e. we can, for instance, 'guess or think out' how a certain process develops and what consequences an act of ours will have. This is why it is important to plan any activities. Imaginative processes allow us to 'travel' in time. We can both go back to the past (memories) and travel into the future by dreaming, planning and expecting. The fact that different experience is also reflected in different associations about the same stimulus is also used in psychological assessments to unveil suppressed or intentionally concealed mental content. The method called the 'association experiment', which was applied for the first time by C. G. Jung in his patients, is still currently being used in psychological assessments (for instance, the well-known lie detector is based on its principles) as well as in clinical and forensic psychology.

6.2 Fantasy

Fantasy is a mental process producing **fantasy images**. Unlike **memory images**, which are a reproduction of impressions and are directly tied to reality, **fantasy images** result from an individual's internal sources. They are new, specific imaginary formations. However, this does not mean that memory images are not applied in their creation. They are, however, processed within new contexts. This is the reason why the borderline between the two types of images is very thin. A range of principles and operations is applied during the process of fantasy creation:

- **agglutination**, i.e. grouping of an object's characteristics with the characteristics of another object (e.g. a sphinx);
- **schematisation**, i.e. elimination of an object's insignificant characteristics and its imaginary reproduction;
- **stylisation**, i.e. transformation of material characteristics and its presentation in a new form;
- **increase or decrease (hyperbolisation)**, i.e. change in the object's size;

- **syncretisation**, i.e. associations of various elements of thinking into new wholes regardless of the details;
- **symbolisation**, i.e. a special significance attributed to objects based on similarity;
- **animism**, i.e. perceiving inanimate objects as being alive;
- **magism**, i.e. reality is not interpreted in natural relations, but in a magical context.

Considering the circumstances of the creation of fantasy images, we can distinguish **intentional fantasies**, created knowingly, with the aim of imagining something. For instance, intentional fantasy is an integral part of the job of fashion designers.

*The currently fairly popular method of collective problem-solving, **brainstorming**, can also be called an intentional fantasy process. Once the problem is identified, all members of the group are invited to produce ideas spontaneously. The results are recorded and free of any control in the initial stage. In the next stage, the group works on the assessment of possibilities of how to use the ideas generated this way to solve the problem assigned. Spontaneity and exclusion of evaluation often seem to produce highly original and valuable solution proposals.*

***Daydreaming** is another special form of intentional fantasy. It is a condition where attention moves from reacting to external reality to the individual's internal world. Psychologists take a different approach to this phenomenon. Some emphasise its hazardousness and regard it as an escape from reality resulting in a lonely life. Others highlight the usefulness of these fantasies when dealing with demanding life situations. Daydreaming makes it possible to draw on mental strengths; it is also usually a substitute for experiencing real love and admiration. In an escalated form, daydreaming can be seen, for instance, in the mentally ill, most frequently in schizophrenics, who then have insurmountable obstacles between them and the real world (Plháčková, 2003).*

Unintentional fantasies can be seen as a contrast to intentional fantasies. These are spontaneous ideas easily developed during hallucinations or dreams and as conscious reactions to frustration and strong emotions.

Fantasies can be either of the creative or reconstructive type based on their level of originality. **Creative fantasies** are actively created and highly socially valuable original images (e.g. literary works or technical inventions). In **reconstructive fantasies**, images are developed with the use of stimulating material (verbal description, schematic display, reading of books, etc.).

In summarising the **importance of fantasy**, we can say that it is a specific reaction of human beings to reality allowing them to temporarily escape from difficult situations, cope with these situations and regenerate their mental powers and self-respect. Fantasy is an important means of life enrichment. As a precondition for creativity, it is applied in every area of human activity.



Review Questions

1. What does 'eideticism' mean?
2. What does 'daydreaming' mean and can it be dangerous for a human being?
3. Please specify the difference between a concept and an image.
4. What is the principle of brainstorming and where is it used?
5. What are the laws of association of images?
6. Is fantasy the same as creativity?



Literature

- ATKINSON, R. L. *Hilgard's Introduction to Psychology*. New York: Harcourt, Inc., 2000.
- HARTL, P., HARTLOVÁ, H. *Psychologický slovník*. 1. vyd. Praha: Portál, 2000.
- HOCKENBURY, D. H, HOCKENBURY, S. E. *Psychology*, 5th Edition, New York: Worth Publishers, 2010.
- KOSSLYN, S. M., ROSENBERG, R. S. *Introducing Psychology*. 4th Edition, Boston: Pearson, 2011.
- NAKONEČNÝ, M. *Úvod do psychologie*. 1. vyd. Praha: Academie, 2003.
- VÁGNEROVÁ, M. *Úvod do psychologie*. 1. vyd. Praha: UK, 1997.

7 THINKING



Objectives

After studying this chapter you will become familiar with the details of the process of thinking. You will learn to distinguish between conceptual and illustrative thinking; you will become familiar with the thinking processes and their results. You will learn how various judgements are formed.



Terms to Remember (Key Words)

- illustrative thinking
- conceptual thinking
- concept
- inference
- judgement
- category
- thought operations
- induction/deduction
- analysis/synthesis
- concretisation/generalisation
- abstraction
- convergent thinking
- divergent thinking
- creativity
- incubation
- illumination
- verification

Thinking is the most sophisticated cognitive process, going beyond the borders of immediate cognition. It helps unveil the essence of various phenomena and their mutual relations, anticipate them and evaluate their importance. From the developmental perspective, we can distinguish two types of thinking:

- **illustrative thinking**, realised through specific activities. *For instance, young children must use their fingers as an aid in addition and subtraction.*
- **conceptual thinking**, based on concepts.

Conceptual thinking is based on general knowledge and concepts. Generalisation is possible thanks to speech, which is referred to as a tool of thinking. The importance of speech with regard to thinking consists in particular in the possibility of releasing thought operations from being bound to a certain time and space and a specific phenomenal form of reality (Vágnerová, 1997). A word is the basic element



of speech, being the bearer of the concept. Concepts, inference and judgement are the three basic products (results) of thinking based on a system of rules for thinking built by logic.

A concept is a verbally expressed aggregate of the general and vital properties of objects and phenomena. *For instance, the concept 'tree' is a summary of all of the general characteristics of the entire class of trees, i.e. poplars, pines, apple trees, etc.* A concept is the result of logical thought operations, unlike an image, which is specific. **This means that the learning of concepts does not merely mean to acquire the auditory (or written, visual) forms of words, but also to understand the meaning they have and their relationship with other concepts.**

A concept represents the entire group of objects by means of a set of properties connected with this class of objects. Concepts are:

- **comparable** (with certain common characteristics) – a greyhound, a dachshund;
- **incomparable** (without common characteristics) – a stone, honour;
- **hierarchically arranged** (a clause, a sentence);
- **equal** (Prague, the capital city);
- **compound** (Hašek, Neruda).

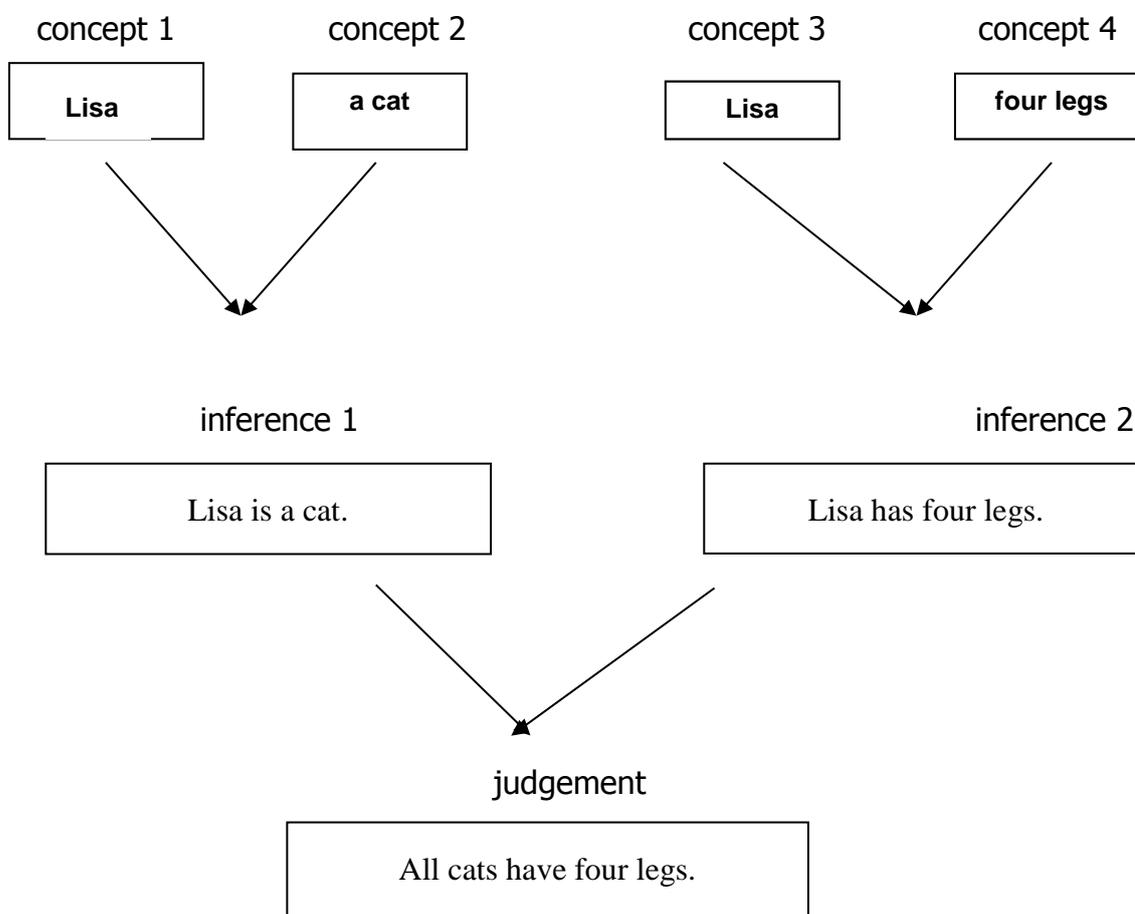
Some concepts can therefore be categorised by the mutual relations of superiority and subordination. The most abstract scientific concepts, **categories**, are at the top of the conceptual hierarchy. No further generalisations can be drawn.

Individual concepts can be compared and mutual relations between them can be found. Such comparisons are called **inferences**. *For instance: 'The tree is green.'* An inference attributes certain properties to objects or denies them.

A **judgement** is another product of thinking, expressing the relationships between and among inferences. Several initial inferences (a premise) are used to draw a conclusion (a judgement). There are **three** main types of judgements:

- **inductive judgement**, proceeding from the specific to the general;
- **deductive judgement**, going from the general to the specific;
- **judgement by analogy**, based on the assumption that if two objects have the same properties, some other objects can have identical properties.

The scheme below depicts the process of developing an inductive judgement:



Scheme 7: **Development of Inductive Judgement** (*Lisa is a cat and has four legs, therefore all cats have four legs*)

It was already Aristotle who described inductive judgement and who pointed to the fact that the conclusions obtained through induction can never be regarded as completely true. They are true only until the moment when a case not corresponding to the general proposition emerges. Inductive judgements are often used in personal practical life. The results of our everyday inductions are usually useful and reliable. However, we must sometimes note that we have acted rashly and have to change our views. People tend to make exaggerated, erroneous generalisations with regard to their personal emotional experience, especially negative experience. This is why they sometimes have to undergo psychotherapy that will help them eliminate the excessive generalisations complicating the establishment of new relationships.

The thinking process used to reach the aforesaid thought products (concepts, inference and judgement) is realised through thought operations.

The main thought operations are:

- **analysis and synthesis**, a detailed analysis of a certain problem or a thought-grouping (synthesis) of particular wholes leading to a certain conclusion;
- **comparison**, seeking similarities and differences;
- **classification**, categorisation into groups based on specific aspects;
- **abstraction**, i.e. separation of essential characteristics;
- **concretisation**, i.e. revelation of what is unique for the given object or phenomenon (in contrast to abstraction and generalisation);
- **generalisation**, i.e. separation of what is common for the given objects and phenomena and what applies to all elements of the same sort;
- **induction**, i.e. proceeding from the specific to the general;
- **deduction**, i.e. proceeding from the general to the specific.

Thinking, which is the crucial part of intelligence, is usually defined as a **process of solving problems**. This requires an understanding of the relations between objects at various levels (both real and symbolic) as well as an ability to operate with information and individual relations. Problems can be solved in various ways. There are two basic ways of solving problems (with corresponding types of thinking):

- **Application of an existing, well-known method**. This uses experience along with conventional and commonly applied approaches. **Convergent (algorithmic) thinking** is applied in these situations (Guilford, 1967 in Vágnerová, 1997). It consists of the finding of a certain algorithm of steps to be taken to reach the expected goal. Sometimes there emerges a mechanism referred to as **functional fixation**, where fixed experience can result in one persisting on a certain way of problem-solving, which may block the application of another approach.
- **Development of a new method of problem-solving**. This requires **divergent (creative or lateral)** thinking. This is flexible thinking, going beyond the conventional way of viewing things. It is manifested through original manipulation of information.

Various individuals have different developmental levels when it comes to the ability to think laterally. The most 'endowed' include inventors, scientists and artists. This is

one of the prerequisites for **creativity**. However, creativity is not an exclusive attribute of towering figures; it can be applied by all people when addressing and solving their everyday problems. According to Lubart, the occurrence of the following factors is required for the development of creativity (Plháčková, 2003):

- **intellectual faculties** (lateral thinking)
- **expert knowledge and skills** (well-developed cognitive models)
- **styles of thinking** (the simultaneous ability to globalise and scrutinise)
- **personality traits** (tolerance for ambiguousness, persistence, non-conformity, courage to take risks and defend one's own opinion)
- **internal motivation** (problems are solved out of interest, not for fame or money)
- **supportive environment** (intellectually stimulating family environment, appreciation of originality by the society)

According to some authors, any creative process has certain stages that can be generalised as follows:

- The **preparatory stage** includes the definition of a problem, the collection of information and a consistent understanding of the problem. An attempt at finding a solution is made during this stage.
- **Incubation** is a stage when the problem is 'set aside' following initial failures. Attention is shifted to everyday matters and the problem remains relatively in peace. However, the information is assumed to be under analysis at the unconscious level at this stage.
- After a varying period of relative peace, an idea emerges accompanied by feelings of relief and satisfaction that are referred to as the 'I see' experience. This period is called **illumination**.
- During the final stage (**verification**), the idea is subject to verification in terms of its quality and suitability. This process requires persistence and patience.

In addition to speech, the process of problem-solving also involves other mental functions. They include **learning**, which intermediates experience, skills and knowledge. The thought activities, in return, stimulate the development of new experience. **Emotions** have a regulating effect on thinking. They can both stimulate and block the problem-solving process. If a problem has a personal dimension for us,

it is usually the emotions that activate us and strengthen our will to work. However, escalated emotions can, on the other hand, prevent rational thinking about the problem. *For instance, the hands of an experienced surgeon can start shaking during a surgery on his/her relative and this work must be handed over to a colleague.*



Review Questions

1. How is the thinking process related to the other mental functions?
2. What kinds of thinking are applied when solving various types of problems?
3. Why is speech important with regard to thinking?
4. Please name some thought operations.
5. What kind of judgement is more common – an inductive or a deductive one? Please give the reasons.
6. What kind of thinking is regarded as being at a higher developmental level – illustrative or conceptual thinking? Please give the reasons.



Literature

- ATKINSON, R. L. *Hilgard's Introduction to Psychology*. New York: Harcourt, Inc., 2000.
- HARTL, P., HARTLOVÁ, H. *Psychologický slovník*. 1. vyd. Praha: Portál, 2000.
- HOCKENBURY, D. H, HOCKENBURY, S. E. *Psychology*, 5th Edition, New York: Worth Publishers, 2010.
- KOSSLYN, S. M., ROSENBERG, R. S. *Introducing Psychology*. 4th Edition, Boston: Pearson, 2011.
- NAKONEČNÝ, M. *Úvod do psychologie*. 1. vyd. Praha: Academie, 2003.
- VÁGNEROVÁ, M. *Úvod do psychologie*. 1. vyd. Praha: UK, 1997.

8 EMOTIONS



Objectives

After reading this chapter, you will understand the importance of emotions in the functioning of the human psyche; you will learn why the experiencing of emotions is associated with physical manifestations and you will be able to distinguish emotions at the lower and higher developmental level. You will become familiar with the term 'emotional intelligence' and will learn why it is important for people.



Terms to Remember (Key Words)

- emotional processes
- emotional states
- emotional relations
- emotional ambivalence
- biological aspect of emotions
- social aspect of emotions
- (pathic) affect
- lower developmental level of emotions
- higher developmental level of emotions
- suggestibility
- empathy
- emotional intelligence
- self-motivation

According to **Čáp** (1993), emotions are the part of personality's lived experience that is manifested as a purely subjective relationship between a human being and what he/she is doing and cognising. This means that the same situation can arouse different emotions in two different individuals.

Emotions are represented in all categories of mental phenomena. The **emotional processes** include, *for instance, rage or fear*; they persist for a short period of time and are more intense. They do not disappear without a trace, but arouse moods and can form a prerequisite to an emotional relationship. The **emotional states** are primarily moods. They affect emotional processes. *For instance, if we feel delighted, a failure will not make us feel so sad.* Also, the tendency to experience certain

emotional states can be part of an individual's personality traits. *Being in a good mood most of the time can be part of more lasting properties such as a sense of humour or life optimism.* The category of mental properties is represented by **emotional relationships**, i.e. long-lasting emotions strongly affecting behaviour and being part of an individual's characteristic properties, *especially love and hate (towards parents, children, a partner, nature, work).* A strong emotional relationship that one cannot master is called **passion** and can be related to various socially appreciated or rejected aspects of life. *For instance, a passion for collecting; a passion for science, for truth, for the fight for freedom; chain smoking.* Emotional relationships and moods are important character traits.

Emotions have three basic dimensions that can be used to describe emotional experience. These include:

- **pleasure vs. displeasure**, dividing emotional experiences into positive and negative ones;
- **tension vs. relaxation** and **excitement vs. calming down** (desire for peace vs. excitement in sport, in cinema);
- existence of **opposites**: love vs. hate, joy vs. sadness;

Emotional ambivalence is another property typical of emotions. Experiencing an emotion need not automatically exclude experiencing opposite emotions. For instance, a certain situation can arouse both pleasant and unpleasant feelings. *For instance, a young mother loves her child, but she can also have negative feelings towards the child because the child prevented her from completing her studies.*

8.1 Biological Aspect of Emotions

The development of emotions results primarily from the effect of the older parts of the brain (from the developmental perspective). When experiencing emotions, we can therefore register various **physical changes** resulting from the excitation of autonomous nerves (sympathetic and parasympathetic systems) and from hormonal activity:

- in facial expressions (*laughter, crying, astonishment*);
- in the movements of the entire body;
- in the tone of voice;

- physiological changes in the activities of the internal organs (*quickened pulse, flushness/paleness, accelerated breathing and sweating*).

8.2 Social Aspects of Emotions

The expression of emotions and the emotional evaluation of reality are subject to cultural standards and customs. Emotions play an important part in relations among people. The evidence of the impact of the social environment on emotions can be seen, for instance, in:

- emotional transmissibility;
- ability to empathise (empathy).

There are lower and higher emotions from the developmental perspective. The **lower emotions** include:

- **emotions of pleasure and displeasure** when satisfying basic life needs. *For instance, hunger, thirst, the need to be protected from the cold.*
- **emotional reactions** to changes in our environment, such as *anger, astonishment, fear;*
- **affects**, i.e. very distinct and powerful emotions that usually do not last long. *For instance, rage, fear or rapturous joy.*

*Affects were originally important for animals and our distant ancestors. They mobilised the organism to escape or attack in threatening situations. They can be of certain importance to people even today, by, for instance, contributing to a good performance in sport or when rescuing a life in danger. However, it is often necessary to master the affect, to keep calm and to act with composure. The so-called **pathic affect** is considered to be dangerous, as it represents a **tendency to react with a strong affect to personally significant situations**. This is, in fact, a state of insanity where consciousness is narrowed, reasonable control is blocked, and the individual often behaves rashly. It is known that various crimes are committed in affect, ranging from bodily harm to murder or suicide.*

The **higher emotions** are the emotions that are important for an individual's integration in the society. These emotions must be developed through upbringing

and later through self-development and self-education. We can distinguish several types of higher emotions:

- **moral emotions**, which we experience when evaluating behaviour from an ethical perspective, *e.g. feelings of moral satisfaction, feelings of guilt, remorse;*
- **aesthetic emotions**, which appear in the evaluation of the beauty or ugliness;
- **intellectual emotions**, which are manifested when identifying and solving problems, *e.g. curiousness, restlessness after a failure, joy from finding a solution;*
- **social emotions**, which we experience in relation to other people, *e.g. concerns about someone else, love, respect, admiration, hate).*

We have already mentioned the subjective aspect of emotions. In addition to individual reactions to the same situation, we can also distinguish emotions depending on the intensity of some other emotional properties:

- **emotional excitability, intensity of emotional manifestations and their control** related to temperament and its management through character;
- **moodiness within the meaning of the speed of changing moods**, which is again a function of temperament to a certain extent;
- **emotional suggestibility**, a personal trait which is in contrast to independence or self-reliance;
- **sensitivity or even emotional vulnerability**, which is also related to temperament, resistance under pressure, and to the personality dimension manifested through stability vs. instability;
- **sensitivity within the meaning of empathy** as an ability to 'feel' the emotions of other people;
- **content of feelings**, making people highly different from one other. They have unequally developed aesthetic, ethical and intellectual emotions, which results in their having differences in interests or attitudes;
- **emotional maturity** as a degree of the total development of especially the higher emotions; people who are not mature emotionally do not have developed higher emotions, which can be, for instance, manifested through a higher level of moodiness or difficulties with self-

control. Emotional maturity is part of character maturity and overall personality maturity.

*The fairly paradoxical term '**emotional intelligence**' has often been used recently in contexts close to emotional maturity. It originates from the efforts of some psychologists to point to the importance of the emotional sphere for a person's success in life. It has been found that a high IQ does not automatically determine a successful and satisfying life. The art of regulating one's emotions while not suppressing them is a crucial factor in emotional intelligence. This term is also usually defined through its five most important properties: the ability to understand one's own emotions, the ability to control one's emotions, self-motivation, the art of recognising the emotions of another, and the ability to empathise (tune oneself into the feelings of another). It can be noted that the positive thing is that all of these abilities can be – at least to a certain extent – learned.*



Review Questions

1. What does 'emotional ambivalence' mean?
2. How is the pathic affect manifested?
3. What properties are connected with the term 'emotional intelligence'?
4. What does 'empathy' mean?
5. What physical changes do usually accompany the experiencing of emotions?
6. How is 'passion' defined in psychology?
7. What is the function of emotions in our life?
8. What is the cause of individual particularities when experiencing emotions?



Literature

ATKINSON, R. L. *Hilgard's Introduction to Psychology*. New York: Harcourt, Inc., 2000.

HARTL, P., HARTLOVÁ, H. *Psychologický slovník*. 1. vyd. Praha: Portál, 2000.
HOCKENBURY, D. H., HOCKENBURY, S. E. *Psychology*, 5th Edition, New York: Worth Publishers, 2010.

KOSSLYN, S. M., ROSENBERG, R. S. *Introducing Psychology*. 4th Edition, Boston: Pearson, 2011.

NAKONEČNÝ, M. *Úvod do psychologie*. 1. vyd. Praha: Academie, 2003.

VÁGNEROVÁ, M. *Úvod do psychologie*. 1. vyd. Praha: UK, 1997.



9 VOLITION



Objectives

After studying this chapter you will be able to define the term 'volition' (or 'will') and will become familiar with the stages of the volitional process. You will learn to distinguish several types of internal conflicts and understand the principle of defence mechanisms. You will learn about various types of frustration.



Terms to Remember (Key Words)

- volition
- incentive
- decision-making
- intrapsychic conflict
- frustration
- defence mechanism
- repression
- suppression
- sublimation
- regression
- rationalisation
- reactive formation
- projection
- intellectualisation
- mental deprivation

Will (volition) is commonly defined as the 'ability to want and its resulting actions' (Nakonečný, 1998b, p. 223). In psychology, this term is a collective designation of the volitional processes and volitional properties that we apply to achieve our goals and to manage the activities aimed at achieving our goals. We realise the importance of volition in situations where we are made to overcome certain obstacles.

Generally, the volitional process has **three stages**. The volitional properties are applied in each of them and they are closely related to all the other mental processes, i.e. the motivational, emotional and cognitive processes. **The first stage starts with the rise of an inception.** This is a reaction to a requirement posed from the outside (by parents, friends or the society) or to the realisation of one's internal motive. This motive is connected to our needs and interests. The rise of the inception is normally accompanied by feelings supporting or resisting this external requirement.

During the second stage, comprising the decision-making process, a goal is chosen. Although this stage often encompasses a conflict between various 'pros' and 'cons', it is usually dubbed a 'clash of motives'. It is in fact an **intrapsychic conflict**, i.e. a conflict where we are made to choose from various goals. K. Lewin (1948 in Drapela, 1997) distinguished the following types of intrapsychic (internal) conflicts:

- **A conflict between two positive goals** where both of them are attractive, but cannot be achieved at the same time. *For instance, this regards a situation where a prospective student is admitted to two schools with both of them being attractive, but the student must choose only one of them.*
- **A conflict between two negative goals** where we choose the lesser of two evils. *Should I pay the fine or take the risk of being prosecuted?*
- **A conflict between a positive and a negative force** invoking ambivalent feelings. Desires often clash with risk or fear. *Should I choose a difficult surgery and undertake the risk that it will fail and that post-operative consequences will be added to my current handicap?*
- **A multiple conflict between positive and negative forces** is frequent in practice. *A child wants to climb a tree, but is afraid to fall. He/she wants to win the admiration of his/her friends but is, at the same time, afraid of being mocked.*

The last two types of conflict are considered to be the most serious ones, but all conflicts in general are demanding for the personality's mental balance. An individual should be able to resolve them and act to prevent any conflict.

*In addition to intrapsychic conflict, we also often encounter **interpersonal conflicts** that can be understood as a dispute or a clash of views between two or among more people. It is a myth that 'good groups' have no conflicts. Conflicts are a natural part of life, because they are based on differences. And even though we experience a range of negative emotions during conflicts (fear, rage, aggressiveness, uncertainty), conflict situations also bring positive elements. They are a source of changes, resulting in the revision of relations and opinions and in the release of tension (Gillern, 2001).*

The second stage of the volitional process results in making a **decision** on a certain goal and in a choice of the path to be pursued to achieve this goal. **Decisions are implemented** during the last stage. The checking of both its course and its particular results is important for its successful course. This requires an ability to

recognise and judge the correctness of one's acts and to do the checking in a persistent and consistent manner.

In addition, obstacles must sometimes be overcome when pursuing a goal. One has to exert oneself, overcome tiredness, and resist offers from other people and the internal motives that sometimes tempt with notions of a more quickly attained and 'painless' goal.

However, an obstacle can appear during the course of a decision's implementation which makes it impossible to achieve the goal. These are **frustrating** situations that frequently appear in everyday life. This is why we have to learn not to succumb to frustrations. Defence mechanisms help us temporarily keep our mental balance. They are usually used to react to more demanding life situations accompanied with negative emotions, anxiety in particular. A large number of defence mechanisms have been identified. The most well-known include (Atkinson, 1995):

- **repression**, which is the basic defence mechanism, according to Sigmund Freud; it is in fact an escape from unacceptable thoughts and desires. The endangering thought is repressed into the unconscious before a decision is made. However, this does not solve the problem; the unacceptable desire and the related anxiety persist and other defence mechanisms must be applied;
- **sublimation**, i.e. the process of satisfying the need in a different, usually socially accepted manner. Sexual energy is thus often transformed into creative activities in science and art;
- **regression**, i.e. a return to a lower developmental level than we are at as a result of our mental balance being threatened; we save energy by temporarily moving into a developmentally lower and less stressful level;
- **suppression**, i.e. the process of intentional self-control where an individual controls his/her impulses and desires (by admitting them in private, but denying them in public) or temporarily puts aside painful memories if he/she must concentrate on a certain task;
- **rationalisation**, i.e. the assignment of logical or socially desirable motives to what we do, so it seems that we are acting rationally. It serves two purposes: it mitigates our disappointment from not having achieved our goal and gives us acceptable motives for our behaviour when we act impulsively or based on motives that we do not want to admit to ourselves and those around us.

- **reactive formation**, i.e. a tendency to express an opposite motive than the actual one with the aim of hiding it from ourselves. *E.g. the fanatical fight of some people against moral decadence, alcohol or gambling can be a manifestation of reactive formation.* They have had problems controlling their own impulses in the past and their zealotry can be a defence against the possibility of going down the slippery slope again.
- **projection** protects us from the cognition of our own undesirable properties by excessively attributing them to other people. If we see how 'bad' other people are, we do not feel so bad ourselves. It is actually a form of rationalisation;
- **intellectualisation**, i.e. an attempt to obtain an emotional distance from a stressful situation by coping with it in abstract, intellectual terms. It is often necessary for people dealing with the problems of life and death in their work.

These mechanisms do not change the stressful situation, but they change the way we perceive it. As they contain an element of self-illusion, they help us overcome unpleasant situations until we are able to cope with them directly. All of us sometimes use defence mechanisms; if they are used only in the first stages of coping with stress, they can be regarded as useful. However, if they become a prevailing method of reacting to problems, they can manifest themselves in problematic personality adaptations.

Deprivation is another, equally demanding life situation. It is a state of distress where a certain significant human need is not satisfied sufficiently, adequately and for a sufficiently long period of time (Langmeier, Matějček, 1974). This experience, especially when lived during the sensitive period of early childhood, can have a negative impact on an individual's further mental and physical development. There are various types of deprivation considering the area where an individual is in distress, including:

- **biological deprivation**, i.e. a long-term lack of nutrition or free movement;
- **mental deprivation**, i.e. a long-term lack of stimuli from the environment;
- **emotional deprivation**, i.e. a long-term lack of loving relationships;
- **social deprivation**, i.e. long-term social isolation;

- **existential deprivation**, i.e. a long-term feeling of existential uncertainty.

A child's stay in an orphanage is one of the situations where deprivation may occur. Children suffer from the low attention of the nurses and the absence of an intimate, loving relationship with an adult who would give them a feeling of stability and certainty. Research that was largely carried out by leading child psychologist Zdeněk Matějček has proven that compared with their peers brought up by parents, children in institutional care have worse motor abilities, are unable to play, are less creative, have difficulties adapting to new situations, and later have worse results at school. Also, they fail much more frequently when creating and building heterosexual relationships.

The volitional processes and properties are not innate; they are formed during one's life through upbringing and in interaction with the requirements and demands of the environment.



Review Questions

1. Please explain the relations and differences between a volitional process and a volitional property.
2. Please name the individual stages of a volitional process.
3. What is the difference between an intrapsychic and interpersonal conflict?
4. What are the general causes of an intrapsychic conflict?
5. Do you know any methods of reacting to frustration? Are these ways of reacting risk-free?
6. What does 'mental deprivation' mean?
7. Please name some volitional properties.



Literature

ATKINSON, R. L. *Hilgard's Introduction to Psychology*. New York: Harcourt, Inc., 2000.

HARTL, P., HARTLOVÁ, H. *Psychologický slovník*. 1. vyd. Praha: Portál, 2000.
HOCKENBURY, D. H, HOCKENBURY, S. E. *Psychology*, 5th Edition, New York: Worth Publishers, 2010.

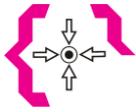
KOSSLYN, S. M., ROSENBERG, R. S. *Introducing Psychology*. 4th Edition, Boston: Pearson, 2011.

NAKONEČNÝ, M. *Úvod do psychologie*. 1. vyd. Praha: Academie, 2003.

VÁGNEROVÁ, M. *Úvod do psychologie*. 1. vyd. Praha: UK, 1997.



10 INTRODUCTION TO DEVELOPMENTAL PSYCHOLOGY



Objectives

After studying this chapter you will be able to explain the basic terms related to the mental development of an individual, will be able to categorise developmental psychology within the system of psychological sciences, will get an overview of the important personalities in the history of developmental psychology, and will learn the methods of studying the rules of mental development.



Terms to Remember (Key Words)

- ontogeny
- phylogeny
- biosocial development
- cognitive development
- psychosocial development
- evolution
- involution
- basic psychology disciplines
- applied psychology disciplines
- longitudinal study
- transversal study
- case study
- observation
- interview
- experiment

10.1 The Scope of Developmental Psychology

Developmental psychology focuses on the description of changes in the individual areas of the human psyche which are typical for a certain period of life. These findings are the basis for deriving common rules with regard to mental development, typical behaviour and ways of experiencing the world during the respective stages of human life. The term **ontogeny of the psyche** is used to describe the mental development of an individual.

More broadly, developmental psychology also uses findings from the study of the **phylogeny of the psyche** (the development of mankind) based on the observation and comparison of various animal species during different evolutionary stages.

One can discern three main areas of human mental development. **Biosocial development** relates to physical development and all the changes related to it. **Cognitive development** contains all the mental processes contributing to cognition. **Psychosocial development** is related to changes in experience and personality traits during socialisation, the process of integrating an individual into society. This division of mental development into the respective areas is primarily theoretical, as a human personality develops as a whole. Physical, cognitive and psychosocial developments are intertwined (Magill, 1996).

In childhood and adolescence, **evolutionary** changes happen, i.e. new abilities and skills are obtained, developed and perfected. **Involitional** changes, the loss of abilities and mental functions, are related to the ageing of an individual.

10.2 ***Developmental Psychology in the System of Sciences***

As a scientific study, psychology broke away from philosophy at the end of the 19th century. It has gradually segmented itself into many areas that can be divided into **basic** psychology disciplines (mostly theoretical) and **applied** disciplines (mostly practical).

Developmental psychology is part of the basic psychology disciplines. No science can develop independently of other areas, which is why developmental psychology is also influenced by the findings of other disciplines in psychology. General psychology defines the basic psychological processes (thinking, memory, emotions) and provides for a more exact description and observation of their development over time. Likewise, the findings of individual psychology form a basis for observations of changes in individual features throughout the lifespan. Social psychology is important for developmental psychology due to its findings on the effects of social factors on an individual's psychological development and the formation of an individual's personality (Atkinson, 2000). Developmental psychopathology must be mentioned among the new specialties, as it studies psychological disorders in the context of the natural relations within psychological development.

The findings of developmental psychology are interconnected with many applied psychology disciplines. For example, clinical psychology, which specialises in the diagnosis and treatment of psychological disorders, draws on the knowledge of natural relations during "normal" development to diagnose the

development of a maladaptive (abnormal) personality. Counselling psychology and educational psychology use the knowledge of what conditions have a positive impact on psychological development and what methods of upbringing and education suit children (and adults) best during individual age periods.

The knowledge of developmental psychology contributes to the creation of real expectations and the notion of reasonable behaviour in relation to people of various age groups, results in the understanding of their psychological needs, and creates conditions for the professional work of educators with students or of social workers with their clients.

10.3 *History of Developmental Psychology*

Scientific considerations on the development of the individual were fuelled by the evolutionary theory of **Charles Darwin** (1809–1882), which served as an inspiration for many psychologists making comparisons between the developmental changes in childhood and the evolutionary stages from that of a lower animal to that of a human being. G. Romanes, I. Sechenov, M. Baldwin and G. S. Hall used various ways to compare the developmental changes in childhood to the evolutionary stages; similarly to phylogenetic development (the development of the human as a species), which proceeds from simple life-forms to those more sophisticated and differentiated, psychological development moves from simplicity to sophistication and the specialisation of mental functions (Hunt, 1993).

G. Stanley Hall (1844–1924), the founder of a psychological lab in Baltimore, started to aim his activities towards scientific work in the USA. For many years he carried out a questionnaire survey on the thinking of schoolchildren and his efforts guided the formation of the budding discipline of child psychology (Cairns, 1997).

The French psychologist **Alfred Binet** (1857–1911) was a pioneer in the study of the intellectual development of children. In 1905 he created the first scale for measuring intelligence, which for the first time in the history of psychology helped determine to what extent a child's intellectual development was behind or ahead as compared to average development. Newer versions of this test are currently being used and are known as the Stanford-Binet Test (Harris, Butterworth, 2002).

Other developmental tools to measure motor, speech, cognitive and social behaviour were formulated by **Arnold Gesell** (1880–1961) who set his focus on an exact description of normal behaviour in individual child development stages. Likewise,

Laura Goodenough (1886–1958) is the author of the still popular 'Draw-A-Man' test for measuring intelligence in children.

Jean Piaget (1896–1980), a psychologist of Swiss origin, is the author of a famous theory on the development of thinking, documented by many experiments where he observed the reactions of children when solving problems. In addition to the development of thinking, he also described the development of moral judgement in children. The American psychologist **Lawrence Kohlberg** (1927–1987) was also concerned with this issue, using a test comprising moral dilemmas to measure the level of moral judgement.

The Institute of Psychology at the University of Vienna became an important centre for developmental and educational psychology in Europe, with **Charlotte Bühler** (1893–1974) being one of its primary figures. She was systematically concerned with the lifelong development of human beings, shifting the focus of developmental psychology from childhood to the observance of changes throughout the entire lifespan. This approach can be called life-path psychology or 'biobromal psychology' (meaning 'lifespan developmental psychology').

The theory of **Erik H. Erikson** (1902–1994) also contributed to the opinion that development does not end with adolescence. He divided the entire human life into eight developmental stages. A human must address a specific developmental challenge in each of these periods, including adulthood.

10.4 Methods of Developmental Psychology

Two basic approaches are applied when observing developmental changes and setting the general principles of mental development: cross-sectional and longitudinal studies (Eysenck, 2002).

A **cross-sectional (transversal) study** compares two or more groups of people of different ages. Developmental changes are deduced indirectly from the established data by comparing the developmental state (e.g. performance in an intelligence test) of the different age groups. The advantages of this method include the option to obtain the necessary information in a relatively short period of time, as it is not necessary to wait until the research participants mature to another developmental level to make a record of the characteristics observed. A possible bias resulting from the effects of various historical and social impacts on the groups observed is one of the disadvantages of the transversal study.

A **longitudinal study** is based on the long-term observation of a group of people over an extended period of time. It enables the researcher to make direct records of developmental changes in the same persons; the research results are more accurate and better reflect the principles of mental development. However, specific life conditions affecting the development of a certain generation must also be considered in a longitudinal study. The longitudinal method is time-consuming, as its results are available only after many years from the beginning of the research.

In all types of studies, the necessary data can be collected using the methods that are generally applied in psychological assessments, i.e. through observation, experiment, interview, questionnaire and analysis of activity results. The standardised psychodiagnostic testing methods are also used to measure personality and performance characteristics (Magill, 1996).



Review Questions

1. To which group of psychology disciplines does developmental psychology belong?
2. How is developmental psychology used in the applied psychology disciplines?
3. Please compare the advantages and disadvantages of longitudinal and transversal studies.
4. Search the recommended literature and give examples of major developmental psychology studies.
5. Please propose topics related to a human being's intellectual development that could be investigated using a longitudinal study.



Literature

ATKINSON, R. L. *Hilgard's Introduction to Psychology*. New York: Harcourt, Inc., 2000.

CAIRNS, R. B. The Making of Developmental Psychology. In DAMON, W. (ed.) *Handbook of Child Psychology*. New York: John Wiley & Sons, 1997.

EYSENCK, M. W. *Simply psychology*. Hove: Psychology Press Ltd, 2002.

HARRIS, M., BUTTERWORTH, G. *Developmental Psychology*. Hove: Psychology Press Ltd, 2002.

HOCK R. R. *Forty studies that changed psychology*. London: Prentice Hall, 2002.

HUNT, M. *The Story of Psychology*. New York: Doubleday, 1993.

MAGILL, F. N. *International Encyclopedia of Psychology*. London: Fitzroy Dearborn Publisher, 1996.

11 THEORIES OF MENTAL DEVELOPMENT PERIODIZATION



Objectives

After studying this chapter you will be able to describe the stages of mental development as viewed by various authors who were concerned with the issue of the periodization of mental development.



Terms to Remember (Key Words)

- id
- ego
- superego
- Eight Ages of Man
- separation
- theory of cognitive development
- zone of proximal development
- stages of moral development

11.1 *Freud's Theory of Mental Development*

In 1905, **Sigmund Freud** (1856–1939) designed a theory of psychosexual development in his '*Three Essays on the Theory of Sexuality*' (Hunt, 1993).

In his psychoanalytical theory, Freud sets his focus on the development of the instinctive life and the dynamic aspect of personality (motivation). Freud assumes that all behaviour and all mental processes are affected by the energy of instincts, the 'libido'. Human personality has three co-existing subsystems that are in constant conflict at the same time. The **id** is the irrational aspect of personality, governed by

the satisfaction of its own needs, seeking pleasure and being inconsiderate to the needs of others. This is typical infantile behaviour. By testing reality, the child finds out that his/her desires cannot be always satisfied, and the rational **ego** is formed. It works at the conscious level of the mind, considering actions and their consequences. The **superego** comprises the limitations and prohibitions submitted to the child by his/her parents and other adults. These standards are gradually internalised; the superego is crucial for the child's moral development.

Freud's division of the stages of mental development is based on the logical shift in the physical zones from which a child gets the maximum pleasure when satisfying his/her instinctual needs (Freud, 1969).

1. Oral stage: Oral stimulation (through the mouth) is the main source of pleasure during the first year of life. At first it is mostly about sucking, and it need not always be connected with fullness; biting comes later in relation to teething. Infants tend to put everything in the mouth to recognise things and their properties.

2. Anal stage: During the second and the third year of life, instinctual satisfaction is shifted to the anal zone. Education towards physical cleanliness and towards the controlling of excretion is of crucial importance during this period.

3. Phallic stage: Starting at about four years of age, a child's interest is centred on the genital organs; the child is curious about the anatomical differences between boys and girls and about how children are born; autoerotic behaviour appears. It is during this stage that the child falls in love with his/her parent of the opposite sex and feels animosity or rivalry against the parent of the same sex. This conflict (dubbed by Freud as the **Oedipus complex** in boys and as the Electra complex in girls) is finally resolved through a process of identification with the parent of the same sex and acceptance of the male/female sexual role. A boy wants to be like his father; a girl wants to resemble her mother. Identification with the parent of the same sex results in the internal acceptance of his/her values and standards. If the child does something wrong, the superego's internal voice arouses feelings of guilt and the child can realise that such actions were incorrect.

4. Latency stage (latency period): The period from about age five to six until the start of adolescence is characterised by the inhibition of sexual impulses. After the internal conflicts of the phallic stage are resolved, this is a period of relative stability when the child's instinctual energy is invested in schoolwork, acquisition of knowledge and new activities.

their abilities, a feeling of security and self-confidence. Parents can support the mastering of this developmental challenge by not excessively protecting the child and by not preventing the child from gaining independence. Families with a disabled child, for instance, are in a much more difficult situation in this respect, as the child's activities are dependent on assistance from others and the child can never become fully independent.

3. Stage of initiative vs. feelings of guilt: Children have a strong need for activity between three and six years of age. Their basic challenge is to develop an initiative that is both purposeful and is not in conflict with the standards set by adults. Feelings of guilt about undesirable behaviour appear. Children of preschool age develop a conscience that can become too strong, i.e. limiting, or too weak. The task of educators is to support children in their activities and set limits and standards in a sensitive way. Overly strong self-confidence increases feelings of fear and anxiety and sets limits on the child's initiative. An overly weak or absent conscience prevents a child's successful integration into the society.

4. Stage of industry vs. feelings of inferiority: Between six and twelve years of age, children head towards the confirmation of their own abilities and competences. Academic performance is of major importance here; children want to succeed and meet the expectations and requirements of adults to achieve the necessary appreciation. A failure to master this stage results in feelings of inferiority and one's own inadequacy. Children who are less successful at school or who are clumsy or awkward have more difficulty resisting these feelings. On the other hand, this stage also has a negative effect in that children can feel that one's value is measured only through performance at work. This attitude can persist until adulthood, taking the form of a neurotic need for performance and success.

5. Stage of identity vs. confusion of roles: The stage of pubescence and adolescence is the stage of seeking one's own identity. The adolescent seeks answers to questions like 'Who am I?' and 'What is the meaning of my life?', and considers life's basic values, the broadest possible meaning of one's own life, and the course of the history of mankind. A failure to master this developmental task can result in feelings of uncertainty about one's own role among other people.

6. Stage of intimacy vs. isolation: During young adulthood, one is willing to give up what was the object of pursuance in adolescence and what was its most precious and most vulnerable aspect – one's own identity. One should be able to let one's own identity merge with the identity of another by forming an intimate partner relationship. If a young person is unable to create a deep, emotional and stable relationship at this time, he/she will face isolation. A failure to master this stage is

related to the tendency to avoid all relationships where there is a 'danger' of intimacy, emotional approximation and a limitation of one's own freedom, an assumption of responsibility, and new duties.

7. Stage of generativity vs. stagnation: During adulthood (approximately from 25 to 50 years of age), one subordinates one's conduct to the need of generativity, i.e. the need to be useful to someone else, to be concerned with activities that are also important to other people. This primarily means procreation and the education of one's own children. However, the term 'generativity' is much broader. It covers a kind of creation and passing-on of values going beyond one's individual life. If an adult fails to fulfil the need of generativity, he/she is left with a feeling of stagnation and personal deprivation.

8. Stage of integrity vs. despair: During the last stage of life (late adulthood), one should achieve a feeling of integrity, acceptance and reconciliation with one's own lived life. An individual who has successfully passed through each of the previous developmental periods will achieve this reconciliation much more easily.

Everyone must face individual developmental conflicts during the course of life regardless of whether we want to or not.

The unique challenge that one faces in each developmental stage is in viewing crises not as disasters, but rather as turning points where one (both as a child and as an adult) is more vulnerable on the one hand, but also has a higher potential on the other hand. The more successfully these crises are resolved, the healthier one's development will be (Sheehy, 2005).

By knowing Erikson's theory, parents and educators are able to better understand the complexity of the lives of the children entrusted to them. The developmental challenges described by Erikson are based on the psychoanalytical approach, but they also have a social aspect, and their successful mastery depends on the environment where the child lives, in particular on the relations with those closest to the child, and on the opportunities other people provide to the child. This means that not only the child, but also the child's environment, in particular the family, must master the developmental challenges of the individual stages.

It is also important to remember that even though Erikson presents these stages in a chronological order, he never says that as soon as a certain stage ends, it becomes a matter of the past forever. The developmental challenges associated with each stage are continuously present in our lives; only the weight of their relative importance varies during the course of life (Sheehy, 2004).

11.3

Stages of the Separation-Individuation Process According to Mahler

Margaret Mahler (1897–1985) followed classical psychoanalytical methods and was interested in the impact of the environment and maternal care on the development of children. In 1955, she presented a hypothesis that the separation-individuation process is normal during the standard development of a child. She carried out a range of studies in the 1960s, observing children and their mothers and the impact of the mother's behaviour on the child's development, the formation of the child's ego, and the ability to **separate**.

'The biological birth of the human infant and the psychological birth of the individual are not coincident in time. The former is a dramatic, observable and well-circumscribed event; the latter a slowly unfolding intrapsychic process.' (Mahler, 1975, p. 17)

Based on her research, Mahler described three basic developmental stages of the child's separation-individuation process in the first three years of life:

The **normal autistic phase** (until about the second month of age) is the period when the biological developmental processes prevail over the psychological ones. A child makes no distinction between the internal and the external world and remains in an 'autistic shell'.

During the **normal symbiotic phase** (in about the second month of age), the child builds a relationship with the mother who acts as the 'supportive ego'. The child behaves as if forming a 'dual unity' with the mother and does not differentiate between the mother's personality and his/her own personality.

During the **separation-individuation phase**, the child's ego is formed and the child gradually differentiates from the person of the mother. Mahler divided this period into four sub-phases:

During the differentiation sub-phase (from the fourth or fifth month to the eight month of age), the child is able to differentiate its own body from the mother's body and slowly also the mother from other people.

The fear of other people emerges for the first time during the eighth month of age.

During the practicing sub-phase (9–14 months), the child starts to actively physically move away from the mother and explore its environment. This is also thanks to

psychomotor development, i.e. crawling at first and walking later on. The child is aware of the spatial distance from the mother, but still experiences the mother and itself as one.

During the rapprochement sub-phase (15–24 months), the child's need to be reassured about its relationship with the mother prevails. If the child feels **separation anxiety** and insecurity when gaining independence (e.g. in new and unknown situations), the child returns to the mother, to its dependent position. The child needs to be reassured that the mother can still be reached. There emerges a developmental conflict between the desire for independence and the need to be in symbiosis with the mother who gives the child basic security. During this period, the child enjoys dependence on the mother until he/she definitely breaks away from her during the next developmental sub-phase.

The sub-phase of individuality consolidation and achieving of emotional object constancy (2–3 years) aims at achieving an optimal emotional distance between the child and the mother.

On the one hand, the child should develop into an independent personality, but should, on the other hand, maintain its close emotional relationship with the mother. The child's 'I' is formed during this stage, being aware of his/her person's separateness from the person of the mother. Emotional object constancy develops through an internalisation of the mother's permanent image that also persists during her absence. The child is then able to be separated without excessive anxiety and to adapt to the coming developmental periods.

11.4 Piaget's Theory of Cognitive Development

Jean Piaget (1896–1980), a psychologist of Swiss origin, is the author of a famous theory on the development of thinking, documented by many experiments where he observed the reactions of children when solving problems.

After completing his studies, Piaget worked on the standardisation of IQ tests for A. Binet and T. Simon in Paris. Piaget was interested in not only at what age children could give the correct answer to a presented problem, but also in why all children made similar mistakes at a certain age. He started talking with children, asking them about the world around them, carefully listening to their explanations, and encouraging them to solve brain teasers that he invented and that became the basis of his lifelong research methods. He began to address the issue of cognitive development in children in the 1920s and was concerned with this topic throughout

his entire professional life, continuously expanding and modifying his theory (Hunt, 1993).

Piaget believed that a child should be viewed as a research scientist doing experiments with the environment to see what happens. The results of such experiments bring the child to develop **schemata**, i.e. theories of how the world works. If the child encounters a new experience, he/she tries to **assimilate** it, i.e. understand it within the meaning of an existing schema. If the old schema is not sufficient to understand a new event through it, the child modifies the schema and thus expands his/her theory of understanding the world. This process of re-creating schemata is called **accommodation** (Atkinson, 2000). The development of thinking occurs in the following stages:

During the **sensorimotor intelligence** stage (from birth to two years), thought operations are tied to the activities performed by the child, to direct perception and to motor acts. Children start to coordinate their own activities, to anticipate the consequences of their behaviour and deliberately repeat the behaviours that are interesting to them. They start differentiating between the means and the target; they gradually become aware of an object's permanency over time.

In the **preoperational thinking** stage (from two to six or seven years), Piaget divides the development of the child's thinking into two separate stages:

*Typical of the **symbolic and pre-conceptual** stage (from two to four years) is the development of the ability to use symbols; for instance, the child is able to imagine an activity without performing it. The child also develops the ability to use signs (sounds, words), i.e. speech. The child is able to use symbols earlier than signs, i.e. the development of symbolic activity is not identical to the development of speech.*

*The **demonstrative** stage (from four to seven years) is characterised by intuitive thinking; the child is not yet able to make logical and deductive judgements. The concepts used by the child are based on the secondary, insignificant properties of the object. The child's thinking continues to be tied to the child's activities. In judgements, the child primarily applies ego-centrism (seeing the world from a subjective perspective and not realising that there may be other perspectives), centration (the child focuses on one characteristic of the situation only and neglects other characteristics) and irreversibility (the inability to proceed retrospectively to the starting point).*

During the **concrete operational** stage (from seven to eleven or twelve years), the child's thinking is tied to the concrete and real world of objects and events.

Egocentric thinking changes into operational thinking using the information from the outside world. The child can perform logical operations and understands the reversibility of actions and processes.

The **formal operational** stage (from 12 years) sees the development of abstract, hypothetical and deductive and critical thought. In this period, thought operations are logical and systematic, at the level of symbolic reasoning and independent of specific experience. The adolescent is able to consider alternative solutions, create assumptions, use fantasy and think about thinking.

According to Piaget, the development of thinking also affects the **child's moral development**. The morality of a preschool child is **heteronomous**, i.e. determined by the commands and prohibitions of adults. Moral evaluations are still fully dependent on an authority that determines what is correct or fair. At the age of seven or eight, morality becomes **autonomous**; the child understands the correctness of his/her conduct as such; he/she has developed a conscience, and slowly abandons egocentric thinking, i.e. he/she is capable of judging a situation from the perspective of another.

However, this morality is rigid until the beginning of adolescence, as the determined principles apply to everyone and under all circumstances. Abstract thinking first develops at the age of eleven or twelve; the majority of children penetrate deeper into the essence of moral judgements. They consider the motives behind certain conduct or behaviour; they take into account the situation as well as the external conditions and internal incentives for specific acts.

11.5 Theory of Cognitive Development According to Vygotsky

Lev S. Vygotsky (1896–1934), the founder of developmental psychology in Russia, published his theory of cognitive development in the 1930s.

However, Vygotsky's work penetrated into European and American psychology much later. His work was not allowed to be published in the former Soviet Union until 1956. Moreover, he died at the young age of 37 and thus could not become established at the international level. For instance, while Vygotsky knew Piaget's theory and commented on it in his texts, Piaget only learned about Vygotsky's work towards the end of his life (Sheehy, 2004).

Vygotsky's theory is to a certain extent similar to Piaget's theory with regard to the assumption that learning and development mean the grouping of new information with the existing knowledge structures. In addition, Vygotsky regarded the development of thinking to be much more than the gradual building of complicated structures on top of simpler structures. Cognitive development is a sociogenetic process that takes place in the social activities of children in their contact with adults who can stimulate their development. Vygotsky's theory is based on four main principles (Vygotsky, 1986):

- Children construct a cognition of the world;
- Development cannot be isolated from its social and cultural contexts;
- Learning can regulate development;
- Language plays the main role in cognitive development.

Vygotsky distinguished two levels of cognitive development: The **actual** (real) developmental **level** is manifested through the ability to solve problems and the level of **potential development** is conditioned with the type of problem-solving that the child is able to perform under the guidance of an adult or a more competent peer. If we want to recognise the actual level of a child's cognitive development and educate the child further, we have to know not only the child's actual, but also his/her potential level of development. Vygotsky called the difference between what a child can do with help and what he/she can do on his/her own the **zone of proximal development**. According to Vygotsky, more competent individuals help us cognise the world and develop new skills. Language is therefore important in this social context, as it is the basic means of social interaction. Children use their language ability as a guide in their activities, and communication between a child and an adult or his/her peers becomes part of the child's thinking.

11.6 Kohlberg's Stages of Moral Development

The American psychologist **Lawrence Kohlberg** (1927–1987) began dealing with the development of moral judgements in his doctoral thesis in 1958 (Sheehy, 2004). The method that he developed and further improved consisted of the presentation of a **moral dilemma** and a subsequent discussion with the research participants.

The Heinz dilemma is the most famous one: A man whose dying wife needs a medicine that he cannot afford is asking a pharmacist to sell him the medicine cheaper. When the pharmacist refuses, the man decides to steal the medicine. Research participants then discuss the actions of this man. The questioning was aimed at finding the reasons why a certain subject decided to choose a certain way

of solving the presented problem. Kohlberg chose a group of fifty Americans aged 10 to 28 years and interviewed them every three years over the course of eighteen years. He identified differences in orientation in the thinking of these subjects and these differences then became the basis of his theory of the stages of moral development (Atkinson, 2000).

Kohlberg (1984) described the following stages of moral development:

1. PRE-CONVENTIONAL MORALITY: Specific consequences (punishment or reward) are accepted as the basis to evaluate certain conduct.

Type I: Heteronomous stage. A child is fully centred on obeying or disobeying an adult and on the resulting reward or punishment.

Type II: Naïve instrumental hedonism stage. A child acts according to certain orders and prohibitions, because he/she expects a certain advantage in return or assumes that some unpleasantness will be avoided.

2. CONVENTIONAL MORALITY: The fulfilment of social expectations is important.

Type III: 'Good child' morality. A child acts as a 'good' child is expected to act; his/her moral conduct serves to create or maintain good relations; emphasis is put on interpersonal accord.

Type IV: Morality of conscience and authority. A child acts in accordance with social standards to prevent criticism from authority and feelings of guilt coming from the child's own conscience.

3. POST-CONVENTIONAL MORALITY: Decisions on what is correct and what is not are based on the principles that an individual consciously accepts as his/her own and which he/she assumes can be agreed by all people.

Type V: Morality as a form of social contract or social usefulness on the one hand and of individual rights on the other hand. A child recognises that the rights of the individual and the entire community must be protected and respected. The child behaves in conformity with social standards from the general welfare perspective.

Type VI: Morality resulting from universal ethical principles. An individual behaves in conformity with standards, because he/she does not want to condemn him/herself. General moral principles apply to everyone, i.e. also to him/her, and he/she must act in accordance with them.

Knowing the stages of moral development results in having adequate expectations of what kind of moral thinking and conduct a child is capable of and what the child's motives are for behaving 'correctly' at a given age. The stages of moral development are expected to generally determine the application of suitable methods and objectives of moral education.



Review Questions

1. What is the perspective that Sigmund Freud uses to categorise mental development?
2. Why is it important that a child develops a feeling of basic trust in early childhood? How can the acquisition or non-acquisition of basic trust affect the mastering of the other developmental stages according to Erikson?
3. Please name four sub-phases described by Margaret Mahler in the process of the gradual formation of the child's ego and its separation from the person of the mother.
4. Please compare the thinking of schoolchildren at the level of concrete and formal operations.
5. Please explain the difference between heteronomous and autonomous morality. What educational approaches support the development of autonomous morality?
6. Please explain the term 'zone of proximal development' and name its author.
7. Propose a moral dilemma that could be used in a discussion with pupils in higher primary school classes.

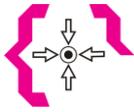


Literature

- ATKINSON, R. L. *Hilgard's Introduction to Psychology*. New York: Harcourt, Inc., 2000.
- ERIKSON, E. H. *Childhood and Society*. London: Souvenir Press, 1970.
- FREUD, S. *An Outline of Psychoanalysis*. London: Hogarth, 1969.
- HUNT, M. *The Story of Psychology*. New York: Doubleday, 1993.
- KOHLBERG, L. *Essays in moral development. Volume 2. The Psychology of Moral Development*. New York: Harper & Row, 1984.
- MAHLER, M. S. *The Psychological Birth of the Human Infant*. New York: Basic Books, 1975.
- PIAGET, J., INHELDER, B. *The Psychology of the Child*. New York: Basic Books, 1969.
- SHEEHY, N. *Fifty Key Thinkers in Psychology*. Taylor & Francis, 2004.
- VYGOTSKY, L. S. *Thought and Language*. Cambridge: MIT Press, 1986.



12 CHILD DEVELOPMENT IN THE PRENATAL PERIOD



Objectives

After studying this chapter you will be able to describe a child's development in the prenatal period. You will realise the importance of parental attitudes and of the interaction between the mother and the foetus on a child's mental development.

Terms to Remember (Key Words)

- prenatal period
- embryonic period
- foetal period
- parental attitudes
- interaction between the mother and the foetus

12.1 Prenatal Development Phases

The prenatal period lasts nine calendar months, from the insemination of the egg until childbirth. Prenatal development can be divided into three periods: In the **insemination** period, the fertilised egg is embedded and three germ layers are formed over a time of about three weeks. In the **embryonic period** (fourth to twelfth week), the basis of all systems is formed. The effect of harmful factors on the embryo during this period may thus cause serious developmental defects. The **foetal period** (twelfth week until birth) is the period of the completion of the development of the organ systems (Schaffer, Kipp, 2010).

12.2 Foetal Mental Responses

Over the last few decades the rapidly evolving field of **prenatal psychology** has been concerned with the mental life of the unborn child. Its prerequisites were outlined e.g. by the Canadian psychologist Thomas Verny (1981).

The first simple mental responses occur during the development of the foetus:

At the beginning of the third month, the foetus already moves its upper and lower extremities spontaneously, turns its head, furrows its forehead, and sucking movements can be seen. The foetus responds to irritation by claspings its fingers.

From the fourth month, the foetus is able to change the expression on its face, opens and closes its mouth and moves its tongue. The foetus responds to being touched anywhere on the skin of the entire body. The formation of basic reflexes begins.

In the fifth month, the foetus starts to perceive acoustic stimuli and hears the mother's heartbeat. It can also recognise basic flavours. Mobility is greater and individual differences in the frequency and intensity of movements begin to be apparent. Every foetus has its own temperament. From the fifth month onwards, sleep and wakefulness can be recognised on an EEG through the brain's bioelectric activity.

In the final third of prenatal life, the foetus learns to respond in a differentiated manner to various sounds: music, its mother's and father's voices, which it then recognises even after birth. **The foetus is provably able to learn** and create conditional links between a sound and a touch stimulus. During prenatal life, the physical and mental functions develop to an extent which allows the child to adapt to the external world after birth.

12.3 *Mother-Foetus Interaction*

The **connection to the mother's organism** is important for the development of the foetus and all changes in the internal environment of the mother's organism also affect the foetus's organism. This happens through metabolic changes in the blood running through the placenta. The foetus may thus suffer from the mother's stress, as the intense emotional response signal is transferred to the foetus. The mother's good mental condition and healthy lifestyle are thus important to the formation of the foundations of the child's psyche.

In the prenatal period we can observe the beginnings of the first **interaction between the mother and the foetus**, which responds to selected sensory data: massage of the mother's belly, touches, and the mother's voice. **The foetus responds to the stimuli with movement activity**. For instance, the foetus responds to changes in the mother's position by seeking the most comfortable position for itself. The mother then registers 'kicking' by the child more often, which motivates her to assume a position which is comfortable for the child.

Parental attitudes are very important for the child's future life. They are formed in the mothers- and fathers-to-be long before conception. The bases of these attitudes are formed as early as during childhood and stem from the experience with one's own parents. The **specific relationship of the parents with the expected child** is formed during pregnancy. Especially in the last trimester, the mother feels the activity of the unborn child, which shows his/her presence and begins to be perceived by the parents as a specific child, to which the parents naturally begin to form specific relationships. Parental attitudes determine how the parents behave towards their child and how they bring him/her up. It is therefore important to focus on the importance of the mental life of the unborn child and the issue of a suitable formative attitude to an infant already in the family upbringing of teenagers, as well as during the preparation of parents for the birth and arrival of their child.

*A longitudinal study by a Czech-American team led by Z. Dytrych and Z. Matějček proved that **children born out of unwanted pregnancy** and children rejected by their parents have more problems in their lives than children accepted positively. In socialist Czechoslovakia, there were so-called 'abortion committees' where pregnant women had to apply for permission to have an abortion. The study started in the 1960s and used a total of 220 unwanted children whose mothers were repeatedly denied abortion requests. The children born out of such provably unwanted pregnancies were followed until adult age and compared to a group of children born to mothers that accepted pregnancy and childbirth. At nine years of age, unwanted children, in comparison to the control group, had a higher frequency of minor injuries and diseases, suffered from being overweight, performed less well at school, their diligence and behaviour were evaluated negatively both by their teachers and their mothers, and they were less popular among their classmates. At the age of 14–16 the differences not only persisted, but grew substantially bigger. At the age of 21–23 these persons more often featured in the registers of anti-alcoholic consultancies and in the criminal register and showed a strong tendency towards creating social problems for themselves. All in all, they were less satisfied with their lives, jobs, partnerships and mental condition. Young mothers also claimed more often that the child they had was unwanted. Similar results were also registered around the age of 26–28 (Kubička, Matějček et al., 1994).*



Review Questions

1. Please name and give characteristics of the stages of prenatal development.
2. What is the name of the branch dealing with a child's mental life during prenatal development?
3. What mental reactions can be seen as early as during the development of the foetus?
4. Is an unborn child able to learn, i.e. to create conditioned associations between various stimuli?
5. Parental attitudes are formed during one's own childhood and consist of the experience with one's own parents. Please give examples of how experience from one's own childhood can later be reflected in parents' behaviour towards offspring.
6. Please explain why children born out of unwanted pregnancy have more difficulties with regard to childhood development and social integration in adulthood compared to wanted children?



Literature

KUBIČKA, L., MATĚJČEK, Z., DAVID, H.P., DYTRYCH, Z., MILLER, W. B., ROTH, Z.. *Children From Unwanted Pregnancies in Prague*. Acta Psychiat Scand, 1995, 91, 361-369.

VERNY, T., KELLY, J. *The Secret Life of the Unborn Child*. Toronto: Collins, 1981.

SCHAFFER, D. S., KIPP, K. *Developmental psychology: Childhood and Adolescence*. Belmont: Wadsworth, 2010.



13 NEWBORN PERIOD



Objectives

After studying this chapter you will be able to characterise the development of newborn babies. You will learn about the importance of social interaction for a child's learning.



Terms to Remember (Key Words)

- perinatal period
- birth without violence
- reflex
- prosocial behaviour
- intuitive parenting

13.1

Definition of the Newborn Period

This period begins at birth and lasts until about the end of the first month. It is a period of **adaptation** during which the child adapts to the conditions of his/her new environment.

13.2

Birth

Birth (perinatal period) and the period shortly before and after birth is a fairly significant physical and mental burden for a child due to the transition from a protected life inside the mother's body into a world full of new stimuli.

The concept of '**birth without violence**' (gentle birth) has been recently promoted in order to prevent any intensification of this burden by the conditions of the environment where the birth is taking place. This concept stems from the French obstetrician Fr derick Leboyer (1976) and his disciple, Michel Odent. 'Gentle' birth is birth that is friendly both to the mother and to the child, restricting the one-sided emphasis on the technical aspects and highlighting the psychological aspects. The

mother should be given the option to choose a suitable position when giving birth and should have access to sympathetic care. The child is born into an environment with subdued lighting and quiet sounds or music. The child is calmed down after birth during his/her first contact with the mother when he/she is laid on the mother's belly and the mother can stroke the child.

A **newborn's vigilance** is more intense during the first thirty minutes after birth, which is why it is useful to give the child the opportunity to make his/her first sucking attempt. It is an important moment to start breastfeeding that has a crucial impact on the child's biological and mental development.

13.3 ***Reflexes and Behaviour of Newborns***

A newborn baby has reflexes ensuring his/her survival, in particular the **searching, sucking, swallowing and excretory reflexes**. Other reactions are a remnant of phylogenetic development which vanish during the first months of life. Currently they are used to check the normal development of a child's brain function. This category of reflexes includes the **Robinson grasp reflex** (which originally made it possible for the young to stay with the mother), creeping, floating movements, and walk-like movements. A newborn baby seems to be relatively mature thanks to these reflexes. When they gradually vanish, it does not mean that the child loses his/her abilities; it rather signals a natural course of development (Schaffer, Kipp, 2010).

In this period the child manifests innate ways of behaviour, including in particular the tendency to perceive the world around him/her and react with crying. **Crying** signals a newborn's state and his/her needs and attracts the attention of his/her caregivers. At first, the child does not cry in order to call the mother, but as she reacts to this crying, the child remembers this association and learns to attract attention this way. Mothers are soon able to differentiate the crying of their children, because it differs to a certain extent depending on what it expresses: hunger, pain or shock.

The **newborn's natural biorhythm** is characterised by very short time intervals of vigilance. A newborn mostly sleeps 20 hours a day and wakes up seven or eight times in 24 hours, most frequently because he/she is hungry or feels wet. The baby can be, to a certain extent, activated by changing its position or by being lifted. However, attention is focused for a very short period of time; a newborn can be attracted by sensory stimuli only for a few seconds.

13.4

Perception

A newborn's development depends on a reasonable supply of stimuli. The perception through which a child receives stimuli from the outside is the basis of orientation in the environment.

If any perceptual function is impaired, sensory and stimuli deprivation emerges that is negatively reflected in the child's development. The early and timely detection of a sensory defect, along with its treatment or compensation, are crucial for the child's development at an early age.

The child does not have a sufficiently developed **vision system** when born. The ability to see is an acquired function and therefore, visual stimulation is important for the further development of visual perception. A newborn can only see well an object that is 20–30 cm distant and that is currently in his/her field of view. The baby cannot accommodate, differentiate a figure and a background, or actively observe an object trying to attract him/her.

*Although newborns have still imperfect visual abilities, they spend a lot of time observing the environment. They are especially attracted by areas of high light contrast, e.g. the edges of things. They also prefer more sophisticated patterns to simple ones and curved shapes to straight ones. Children are attracted to **perceive the human face**, which has many of these properties: curved lines, high contrast, interesting edges, movement and sophistication. Newborns primarily watch the outer facial contours, but at the age of two months they shift their attention to the actual facial attributes – eyes, nose and mouth. This is also the period when a child starts making eye contact (Atkinson, 2000).*

A newborn child already has some experience with **auditory perception** from the prenatal period. A newborn can recognise and prefers the voice of his/her mother, which can be distinguished from the voices of other women. If a newborn hears a loud noise, he/she will get scared and will turn his/her head towards the source of this noise. This reflexive reaction will vanish after some six weeks of age. The ability to localise the source of the noise develops at around three or four months of age as a skill controlled by will.

A newborn can perceive **touch, temperature** and **changes in position**; skin contact with the mother is important, as it is associated with feelings of pleasantness.

Newborns can also recognise differences in **tastes**. They prefer sweet liquids.

A newborn's characteristic reaction to sweet fluid is a relaxed expression similar to a slight smile, sometimes accompanied with the licking of the lips. Sour fluids make a newborn purse their lips and turn up their nose. When responding to bitter fluid, a newborn opens the mouth with the corners downwards and shows the tongue, which expresses distaste.

Olfactory perception is also important. The innate ability to differentiate smells is of adaptive importance: It helps a newborn avoid harmful substances, which increases the likeliness of the child's survival.

13.5 Learning and Social Interactions

Newborns **learn** in particular through contact with their caregivers and are active participants in **social interaction** from the very beginning. It is not correct to understand a newborn as a non-differentiated being that only receives care and stimuli from the environment in a passive way. Children display fairly large differences in their behaviour from birth, e.g. in the way they manifest their temperament. A newborn also differentiates between the stimuli offered; the baby sometimes reacts to certain stimuli while others are ignored or actively rejected.

Although a newborn is 'socially naïve', the child is not 'socially blind', i.e. he/she does not lack the ability to receive and react to social signals. One can say that the child is ready from birth to develop social interaction; this behaviour is called the **prosocial behaviour** of newborns.

Parents are, on the other hand, equipped with **intuitive behavioural patterns** helping them in their interaction with the child. They include searching and maintaining eye contact, imitating the facial expressions and vocal manifestations of the child, and changing the tempo, rhythm and intonation of speech (Papoušek, 1987).

*Objective observations have proven that the **interaction between a parent and a young child** is completely different than the interaction between an adult and another adult or an older child.*

- 1. When talking to a young child, the mother exaggerates her expressions, speaking with a higher voice and more slowly; speech is accompanied by more*

expressive facial expressions and movements; eye-to-eye contact lingers; she moves her face towards the child at a distance of about 20–25 cm.

- 2. The repertoire of the means of expression is not that wide; it is mostly limited to several manifestations which the child is able to differentiate more easily.*
- 3. The mother repeats her manifestations in a fairly typical manner. All circumstances apparently encourage the child to be actively involved in interpersonal communication with its still limited perceptual abilities.*

Parental behaviour which is gently harmonised with the behaviour of a newborn enables the baby to learn quickly in every respect. It is important for the successful socialisation of the child, who becomes familiar with the fundamentals of human communication during its initial interactions with the mother.

The **activities** of both participants are **synchronised** during the treatment and care of the child, during breastfeeding and bathing, and also during social playing that in the beginning takes the form of **imitations of the child**. Parents intuitively hold up a 'biological mirror' or make a 'biological echo' as a reaction to the newborn's facial expressions and vocal signals. Based on the intuitively and sensitively focused response from the parents, children increasingly realise their 'selves', their own behaviour and their emotional states.



Review Questions

1. Please compare the conditions of intrauterine life with the conditions to which a child must adapt after birth. Search the recommended literature and find the principles of handling a newborn which help the child adapt more easily to life after birth.
2. What reflexes are necessary for a newborn to survive?
3. Why is social interaction important for the development of the child's abilities?
4. In what respects is the interaction between a parent and a newborn different from communication aimed at older children or adults?



Literature

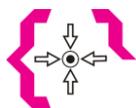
ATKINSON, R. L. *Hilgard's Introduction to Psychology*. New York: Harcourt, Inc., 2000.

PAPOUŠEK, H., PAPOUŠEK, M. Intuitive Parenting: a dialectic counterpart to the infant's integrative competence. In OSOFSKY, J. D. (ed). *Handbook of Infant Development*. New York: Wiley, 1987.

LEBOYER, F. *Birth without Violence*. New York, 1976.

SCHAFFER, D. S., KIPP, K. *Developmental Psychology: Childhood and Adolescence*. Belmont: Wadsworth, 2010.

14 INFANT AGE



Objectives

After studying this chapter you will be able to characterise the development of the child during infant age. You will acquire knowledge about the development of gross and fine motor skills, perception, thinking, speech and the basic milestones of the child's socialisation during its first year of life.



Terms to Remember (Key Words)

- tonic neck reflex
- orienting and searching reflex
- infant jargon
- sensorimotor intelligence
- awareness of permanence of objects
- social smile



14.1

Definition of Infant Age

The term 'infant age' refers to the **first year of life**, which is marked by the rapid development of skills that are the basis for our further interaction with the world.

14.2

Development of Motor Skills

The basic and still valid findings on child development were made in the 1920s, primarily by Charlotte Bühler's Vienna school and the Arnold Gesell Institute at Yale. These findings helped create a better understanding of motor and mental development and supported more effective developmental diagnostics.

Gesell formulated some of the **developmental principles** which are generally valid, he argues, but which were derived from the development of infant motor skills (Gesell, 1945):

1. The developmental direction principle indicates a certain shift in space over time, i.e. gradual control over individual parts of the body according to physical growth:

- a) **Cephalocaudal** pattern – the development of motor skills takes place from the head downwards; the child first controls the movement of the head, then the coordination of the hands, sitting, crawling, the standing position, and finally walking;
- b) **Proximodistal** pattern – the motor skills develop from the body axis to the sides, i.e. from uncoordinated movements of the limbs to fine digital motor skills;
- c) **Ulnoradial** pattern – moving from the little finger side of the palm to the thumb side for active grasping.

2. The principle of reciprocal interweaving in neuromotor functions is apparent primarily in the changing of the dominance of the flexors and extensors.

As a general principle, the child acquires specific functions by achieving a certain degree of perfection and then seemingly returning to the earlier way, in order to be able to exceed the earlier performance and move to a higher level.

3. The principle of the reciprocation of functional symmetry and asymmetry shows the gradual specialisation of the right and left sides of the body at permanently increasing levels.

*A small infant is lying on a bed in the typical 'swordsman' position, with its head turned to one side. The extremities are laid out asymmetrically. On the side to which the head is turned, the arm and the leg are in a straight position, while on the other side the extremities are bent at the elbow and knee. This **tonic neck reflex** retreats around the age of three months and is replaced with a symmetric layout of the extremities, over which the infant is taking active control.*

4. The principle of individualisation: every child is a unique individual with a distinct way of growing, even though a regular sequence of development is generally observed.

For instance, before children learn to walk, they should master crawling. Many children learn to move from place to place in other ways. Some are perfect rollers ('barrel rolling'), others move while seated by using their bottom to hop up and down and still others may crawl backwards (Stoppard, 1992).

5. The principle of self-regulation: the regime of eating and sleeping based on self-regulation by the child according to his/her own needs is optimal.

A child who is not dictated any pre-set regime from the outside gradually extends the intervals between eating sessions, increases the amounts of received nutrition and extends the periods when it is awake.

Development of gross motor skills: When positioned on the belly in approximately the second month of age, the infant is able to raise his/her head and keep it raised. At the age of three months, the child is able to rest on the forearms and keep the head firmly raised. At six months, the child holds on by the fingers and pulls him/herself upwards into a seated position; later on, the child sits on his/her own, thus getting a richer view of the world. Between the sixth and the ninth month of age, the child starts gradually raising himself or herself up on the palms and knees while positioned on the belly and learns to crawl. The child attempts to gradually stand on his/her own feet, learns to walk guided by the hand, and takes the first steps at the end of the first year.

The **development of fine motor skills** is possible thanks to the releasing of the fists, which are mostly clenched during the infant period. In the third month of age, the child responds to seeing interesting objects by moving the hands animatedly. The child can master intentional movement towards a certain object at around the fourth month of age, which is also when the coordination of hand-mouth activity develops. The child is able to grasp a toy and put it into the mouth. The child uses

sucking and biting not only to ingest food, but also to study various objects. At the age of six months, the child coordinates the movements of both hands and is able to hand a toy over from one hand to the other. Releasing objects actively is significantly more difficult than grasping them and is managed by the child at around the ninth or tenth month, when the infant intentionally and repeatedly throws objects out of the bed and watches them. At the end of the infant period, fine hand motor skills develop, as does the so-called 'pincer grasp' where the child picks up small objects between the first finger and the thumb.

14.3 Perception

The infant's **attention** is based on its innate **orientation and exploration reflex**; the child registers and responds primarily to stimuli that are new, interesting and/or strong.

Sight is important primarily for maintaining the child's activity and attention, as it is an important source of information and allows the child to orientate in the environment. A young infant perceives objects at a distance of about 30 cm while a three-month-old baby is able to focus on objects at a distance of 12–50 cm. This is sufficient for precise perception of the immediate environment. The child observes the objects that it holds and reaches out for others that it sees. At the end of the eighth week the child is able to follow a moving object with his/her eyes. The visual stimuli stimulate the movement of the head and are an impulse for its raising if the child is lying on the bed and wants to see them better. A half-year-old child is able to watch moving objects with its eyes only and does not have to move its head. The child's peripheral vision begins to improve starting in the third month of age and after the sixth month, the infant is able to perceive space. The following manifestations of undisturbed visual perception occur in the course of the first year (Stoppard, 1991):

*The **infant** watches the face, primarily its outlines or the eyes, as well as its moving parts, e.g. the mouth.*

***At eight weeks** the child should be able to recognise the mother's face and respond by smiling and waving its hands.*

***At 12 to 16 weeks** the child does not watch just the outlines of objects, but also perceives details. If the parent holds a toy 20–25 cm from the child's eyes and moves it to the left and to the right, the child should be able to follow it with its eyes.*

***At 20 to 24 weeks** the child sees the adult's face so clearly that he/she is able to differentiate the expression of emotions, such as joy, sadness or fear, and respond to*

them. When the child sees that the mother is preparing food, he/she begins to be impatient.

From 24 weeks the child starts identifying objects and knows that an object is still somewhere even when it does not see the object. The child is able to assume a position allowing him/her to see the objects that he/she is interested in, and he/she turns backwards or bends the head to get the object into the field of view.

At one year the child is able to watch rapidly moving objects. If the parent moves a toy quickly in the child's field of view, the child should be able to follow the toy with its eyes and not turn its head.

Hearing, unlike sight, functions as early as during the prenatal period. A young infant does not have the same hearing range as an adult, however. The infant recognises high tones more easily and as early as from the moment of birth, the infant prefers the sound of the human voice over any other auditory stimulus. A one-month-old child is able to differentiate human speech from other sounds. The ability to localise the source of a sound undergoes an interesting course of development: the infant is able to recognise the direction of the sound, but this ability is given by a reflex that vanishes after two months. The ability to determine where a sound is coming from again develops between the third and the fourth month. This skill is acquired by learning. Auditory perception is a necessary prerequisite for the development of speech. The following manifestations should occur in hearing children and their absence may signal hearing defects (Stoppard, 1992):

*The **infant** should be startled by sudden, loud sounds and its dismay should be accompanied by blinking or opening the eyes wide.*

Around four weeks the child should start noting long, persistent sounds, such as the sound of a vacuum cleaner.

Around 16 weeks the child should be calmed down and start smiling when it hears the sound of the mother's voice, even when it does not see the mother. The child may also try to turn its eyes or its head towards the mother's voice.

Around 28 months the child should turn the head towards the mother's voice coming across the entire room and should turn the head even towards quiet sounds coming from the sides.

Around the 36th week the child should listen to the known daily sounds carefully and try to detect the origin of the sounds coming from places outside the child's field of view.

Around the end of the first year the child should respond somehow to hearing his/her name and other frequently repeated words.

The child must have sufficient opportunity to perceive spoken speech so that he/she learns to differentiate and imitate it. Infants come into the world with the ability to differentiate among various sounds that correspond to the various forms of any language. During the course of the first year, the child learns which phonemes belong to his/her language, and loses the ability to differentiate among the sounds that correspond to the same phonemes of the child's mother tongue. Children basically lose the ability to differentiate the speech sounds that will be of no importance for their understanding and production of language (Atkinson, 2000):

There are sounds that adults 'hear' as identical, as there is no difference between them in their native language. For instance, the sounds 'la' and 'ra' in Japanese are perceived as the same and Japanese adults do not differentiate between them. Japanese infants are able to differentiate these sounds, but lose this ability in the first year of their lives. Children are thus born with their perception mechanisms tuned to the characteristics of human speech that help them learn to speak. During the course of the first year of their lives, they gradually begin to 'eliminate' the sounds that adults do not use.

Infants have an innate ability to start producing sounds from the fourth month of their lives. Initially, their **gurgling** has a reflexive nature and appears even in deaf children, but retreats gradually in these, as it is not supported by feedback. Children with normal hearing experiment with their voice, repeat what they find interesting, and listen to their own voice expression.

Between the sixth and the eighth month, children start **babbling**, i.e. repeating clearly articulated syllables. The motivation for speech development stems from the need to keep social contact. Children notice how people respond to their babbling and learn that it is a good means of maintaining interaction.

At the end of the first year, children combine various syllables, using the **first word** with a meaning (papa, mama). Some of these expressions have the nature of **infant jargon** – jargon that only parents can understand. Children use their own abbreviated and distorted expressions such as 'splash-splash' (i.e. bath, splash), 'oof' (meaning a dog, woof). The **ability to understand the meaning of words** appears before the child starts using the words as such. The child understands some simple verbal expressions as early as at the age of 8–10 months, e.g. 'no', 'you must not', 'give me', 'mama'.

14.5

Development of Thinking

According to Jean Piaget, the infant period is described as the phase of **sensorimotor intelligence**, as perception and motor skills play the main role. Cognition and learning take place at the level of specific contact with the real world (Vágnerová, 2000):

The **primary circular reaction** phase runs from the first until the fourth month. It is characterised by the child's concentration on its own body and its manifestations, primarily on the new activities that the child discovers, e.g. the movement of its arms and legs. If the child finds an activity attractive, he/she repeats the activity over and over. These reactions are therefore called circular. The infant repeats the movements out of the joy that the actual activity causes, without an attempt to achieve a goal.

The **secondary circular reaction** phase runs from the fourth until the eighth month of age. The child shows growing interest in the world around him/her and stops enjoying the activity itself per se, with it becoming an instrument for achieving certain goals. Initially the infant discovers the effect of his/her conduct randomly. For instance, the child is waving his/her hands and unintentionally hits the toys hanging above him/her. The toys swing and make sounds, which the child enjoys and thus repeats the activity. The infant learns that his/her activity may cause other things to happen and develops intentional actions. **Awareness of the permanence of objects** appears. An eight-month-old child is already aware that objects and people exist, even though he/she may not see them at the time.

The phase of **coordination of the secondary circular reactions** runs from the eighth until the twelfth month of age. The child is able to set a goal and seeks an instrument, an activity, towards its achievement. The child tries to use tested methods, and combines various activities to achieve the desired goal. Playing during the infant period has the nature of experimentation – exploring things and trying out what can be done with toys.

14.6

Infant Socialization

Social learning, which takes place as part of human interaction, is a means of socialisation for the infant. The child has innate predispositions for such contact. From the very beginning, the child prefers stimuli of a social nature and is more easily attracted by the human voice and face than by other auditory or visual stimuli. The child uses its inherent manifestations (facial expressions, shouting, crying, gurgling) to attract the attention of adults and stimulate the so-called **intuitive parenting**, which becomes a source of social learning for the child.

The infant is able to return eye contact very quickly and the first smile appears at the end of the second month. In the third month of age, the child learns to communicate

quite well with the smile – the smile is an expression of interest in contact with other people, and is thus commonly called the **social smile**. From the third month, the infant begins to laugh aloud. The infant makes more active contact with people and responds to human faces in a lively manner with facial expressions, movements and verbal manifestations.

Between the third and sixth month, simple **social play** initiated by adults starts appearing in the interaction between the child and the adult. The child takes a toy into his/her hand from the adult already at the age of three months. From the sixth month of age, the child starts differentiating between the people offering toys. If he/she takes an object from someone, it means that he/she accepts the giver. The child begins to differentiate between known and unknown people. The **fear of strangers** and unknown situations appears in the seventh to the eighth month. From the seventh month, the infant responds to separation from the mother with opposition and seeks the mother when she is not present. Younger children do not protest against separation from the mother if their living habits and due care are preserved.

At the end of the infant age, so-called **attachment** is fully on display – the child tends to seek the nearness of certain people, behaviour related to the feeling of higher certainty in their presence.

According to E. Erikson's theory, during the first year of life the child gains the basic experience of emotional acceptance, which leads, in the optimal case, to the formation of a **feeling of certainty and safety** in one's life. This depends primarily on the positive acceptance of the child by the parents along with adequate satisfaction of the child's needs and the comprehensibility of their communication.



Review Questions

1. Please describe the development of gross motor skills during the first year of life.
2. What does the 'orienting and searching reflex' mean?
3. When can we see the 'social smile' in infants?
4. When does a child start to manifest a fear of strangers?
5. Please characterise the first year of life from the perspective of E. Erikson's theory.



Literature

ATKINSON, R. L. *Hilgard's Introduction to Psychology*. New York: Harcourt, Inc., 2000.

GESSEL, A. *The Embryology of Human Behavior: the Beginnings of the Human Mind*. New York: Harper, 1945

SCHAFFER, D. S., KIPP, K. *Developmental Psychology: Childhood and Adolescence*. Belmont: Wadsworth, 2010.

STOPPARD, M. *Test your Child*. London: Dorling Kindersley Publishing, 1991.

15 TODDLER AGE



Objectives

After studying this chapter you will be able to describe the development of a child during toddler age with regard to the child's motor skills, thinking, speech and play. You will realise the importance of this period for the development of the child's personality and for the formation of emotional bonds.



Terms to Remember (Key Words)

- symbolic, pre-conceptual thinking
- symbolic play
- emotional bond
- attachment
- emancipation
- first obstinacy period



15.1

Definition of Toddler Age

Toddler age is between the **first and the third year** of a child's life. It is a period of the **first emancipation** during which the child becomes more independent. The child's personality also changes considerably.

15.2

Motor Skills and Self-sufficiency

A toddler perfects his or her abilities in independent **walking** where he/she becomes more self-confident. Although the child takes his/her first steps at about the first year of age, he/she still needs some more time to be able to start walking from a relaxed posture, to take a few steps and to stop without the need to hold on to something. The ability to maintain balance is also manifested through the toddler's ability to lift an item from the floor without falling down. The toddler starts **running**, although in the beginning he/she cannot stop or change direction suddenly; toddlers learn to **jump about** and behave in a rhythmic way. At about 18 months of age they can **walk up the stairs**, if held by the hand; they can walk up the stairs without holding on at the age of two, when they also gradually acquire the ability to go down the stairs as adults do, one step at a time. Independently **walking down the stairs** is more difficult and requires skills that the child acquires only at about three years of age.

The child can ride a tricycle at the end of the toddler period.

A toddler also gains independence through **self-sufficiency** by being able to eat with a spoon, drink from a cup, and get dressed and undressed. The development of motor skills also involves the control of the sphincters; the child learns how to control excretion. A toddler gains full independence and **control over his/her own excretion** at around two years of age. The majority of children, however, experience occasional wetting later on, especially at night or if they are absorbed in playing.

Development of fine motor skills: After the first year of age, a child can intentionally and precisely release items to be able to start building a tower of two or three building blocks. The child makes attempts to turn through the pages in a book and starts doodling with crayons on a piece of paper. At the age of two the child is more goal-directed when using a pencil; he/she can assemble simple building sets, throw a ball and learn to catch it. The first attempts to depict a human figure by drawing a so-called 'cephalopod' come at about three years of age. The child learns

how to use scissors, a skill which requires major progress in sensorimotor coordination.

15.3 *Development of Thinking and Speech*

Jean Piaget called this period the stage of **symbolic** or **pre-conceptual** thinking. After reaching the second year of age, a child can imagine a certain activity and its results without actually doing it. When solving a problem, the child no longer factually tests various options, because he/she can verify them at the symbolic level, i.e. in the mind.

The **development of speech** is in mutual interaction with the development of cognitive processes. Words can represent reality in the mind even better than images or image symbols do. A toddler must be able to master the semantic aspect of speech; he/she must learn to differentiate the meanings of words, the content of what they designate. A child's vocabulary develops at the passive level (the number of words the child can understand) as well as at the active level (the vocabulary the child uses).

Passive understanding of verbal communication can be manifested by a toddler after the first year of age by showing an object, an animal, etc. in a book if requested. The child can understand simple requests from adults such as 'Bring me your teddy bear'.

Active vocabulary: Only one widely used verbal expression works as verbal communication at 14–15 months of age. For instance, 'yum' is used to designate everything that the child can eat.

At about two years of age the child moves to the level of two-word communication, i.e. the first simple sentences. The child expands his/her vocabulary by frequently repeating questions such as 'What is it?', because the child can understand that each thing has a name. Questions like 'Who is it?' and 'Where is it?' come a bit later. However, the acquired words do not sometimes suffice to express the child's expanding experience, which is why toddlers often create new words and also apply various analogies in grammar. The child can ask for something to eat, to drink, or for a toy later on thanks to the development of speech and thinking. The child repeats short rhymes and learns to differentiate and name colours and shapes; some children can count to ten at the age of three. However, individual differences can be clearly seen in the development of speech. Some children start speaking at three years of age, but this delay need not have any impact on further mental development, because many initial differences balance out later.

15.4

Toddler Play

The character of play centres on **handling and experimenting with items**, on the curious discovery of the basic properties of things. To perform these experiments, the child seeks things of daily need and objects handled by adults. Toddler play is based on the imitation of behaviour. The child **imitates** behaviour that draws his/her attraction, and these repeated activities do not even have to be done in pursuit of a specific goal.

For instance, the child imitates the mother's movements while vacuum-cleaning, the sound of a driving car, etc.

The beginnings of **symbolic play** emerge in connection with the development of thinking. The child plays with a certain thing that can each time represent a different object or play a different role.

For instance, a small car represents an actual car driving in the street or carrying something. The child can feed a teddy bear with small marbles as if they are candy and at the same time be aware that they are not actual candy.

Toddlers like being in the company of other people, both adults and their peers. Toddlers like **playing alongside other children**, imitating them, but they still cannot play with one another. They also do not like sharing their favorite toys. The abilities to empathise, cooperate and compete are learned later, during the coming developmental periods.

15.5

Personality and Development of Self-awareness

Self-awareness emerges during the toddler stage of development. Until the age of two a child usually uses third-person expressions to talk about him/herself, copying what it hears from other people ('Annie fell down'); first-person expressions are used only in the third year of age. The child becomes aware of him/herself as an autonomous entity and starts to distinguish his/her own 'I' from those of other persons, especially the mother. Parents contribute to the **forming of the child's identity** ('Who am I?') by how they address the child, i.e. 'you little rascal', 'what a nice/good boy', etc. The toddler accepts their opinion without any correction.

The American psychologist Jerome Kagan (1984) describes the unmistakable **signs of emerging self-awareness** in a small child's behaviour:

1. Self-praise – the child often says he/she is being nice, pretty, etc. – the child engages in self-evaluation.

2. Self-regulation – if the child wants to do something forbidden, he/she may sometimes say to him/herself: 'I will not do that!'
3. Sensitivity to his/her own failures – the child responds to his/her own failures by crying, running to the mother, stopping play, etc.
4. Efforts to do things without help – getting dressed, eating, etc.
5. Victorious smile – when the toddler achieves something new.
6. Self-recognition in a mirror.
7. During play the child makes a toy take his/her place, e.g. he/she makes a teddy bear make a phone call instead of the child.
8. The child uses the pronoun 'I' and first-person sentences.
9. Child obstinacy.

15.6 *Emotional Bonds, Attachment*

Attachment is manifested in a child's tendency to seek the physical proximity of certain people and in his/her higher self-confidence in their company. Most attachment research is based on the work done by **John Bowlby** (1907–1990) in the 1950s and 1960s. Bowlby concluded that the failure to form safe emotional attachments in the early phase of development leads to an inability to develop close personal relationships in adulthood. Bowlby (1969) describes the following **stages of attachment development**:

Stage 1: Orientation and responsiveness with limited recognition of individuals – from birth to 8–12 weeks; the child's ability to recognise specific individuals is limited. The child responds to any human being in its proximity indiscriminately, by visually tracking them, grasping and reaching for them, and smiling and babbling.

Stage 2: Orientation and responsiveness to one person (or several) – in this stage the child continues to display the same friendly behaviour to all individuals just like in the first stage, but the behaviour is more marked in relation to the mother than other people.

Stage 3: Active proximity seeking – during this stage children show increasing discrimination in their interactions with people and build up their range of skills, e.g. they are able to visually follow the leaving mother, greet her when she returns, etc. At the same time, the child no longer displays friendly reactions to all humans. Some may become subsidiary attachment figures while others are rejected. Strangers are now treated with greater caution or even fear. This stage starts at six to seven months of age and continues through the toddler phase until three years of age. The beginning of this stage may occur as late as after the child's third year, especially in children who have had limited contact with the primary caregiver.

Stage 4: Partnership development – the child starts to develop an understanding of the mother's feelings and motives and foundations are laid for the two to build a much more complex mutual relationship. Some children enter this phase already during their third year.

Bowlby's collaborator **Mary Ainsworth** (1913–1999) developed a research tool (known as the 'strange situation') for evaluating a child's attachment between 12 and 18 months of age. Ainsworth observed children and their responses in various situations, e.g. the mother leaving and returning to the room. The responses were carefully recorded in terms of the child's activity level, involvement in games, crying, distance from the mother, attempts to attract her attention, distance from a stranger, willingness to engage with the stranger, etc. The children were then divided into three groups (Ainsworth, 2003):

Secure attachment: *the child may or may not be distraught by the mother's leaving. When she returns, the child seeks contact with the mother. Some children only need to know that the mother is back and they will continue playing as before. Other children require physical contact with the mother. Approximately 60–65% of children are in this category.*

Avoidant-insecure attachment: *the child clearly avoids interaction with the mother after her return. Approximately 20% of children belong to this category.*

Ambivalent-insecure attachment: *the child has an ambivalent response to the returning mother. It may seek and resist physical contact at the same time. For example, the child cries to make the mother pick him/her up, but then he/she angrily demands to be put down. Approximately 10% of children belong to this category.*

15.7 **Need for Emancipation**

E. Erikson believes that a typical psychological conflict during toddler age is the **conflict between the need for emancipation and the doubt arising from failures** in independent activities. A toddler should gain basic confidence in him/herself and his/her abilities. The child needs confirmation of his/her competences; the child yearns for praise and appreciation of his/her achievements. Positive feedback from adults is crucial for the development of a child's personality.

Child emancipation normally begins at the end of the toddler phase, between the child's second and third year of age, and is manifested by a **need for self-assertion**. It usually takes the form of 'I am' expressions used by the child in an effort to solve situations on their own. Another manifestation comes in the form of 'I want' expressions reflecting the child's need to assert his or her own will while testing the limits of what the parents may allow. This phase is referred to as the

time of the first rebellion or **negativism**. Child rebellion is not accidental; it is a natural part of child development where the toddler explores his/her own autonomy and encounters various obstacles and limitations in the environment.



Review Questions

1. Please describe the development of speech during toddler age.
2. What is typical of so-called 'symbolic play'?
3. What are the typical manifestations of self-awareness that we can observe in a toddler?
4. Please name the author of research studies which centred on the development of emotional bonds.
5. What types of attachment did M. Ainsworth describe?
6. Please give examples of educational procedures that inhibit a child from achieving emancipation and acquiring confidence in his/her own abilities.



Literature

- AINSWORTH, M. D., BLEHAR, M. C., WALTERS, E., WALL, S. *Patterns of Attachment: A Psychological Study of the Strange Situation*. New York: Erlbaum, 1978.
- BOWLBY, J. *Attachment and Loss – Attachment*. London: Chatto Windus, 1969.
- BOWLBY, J. *Attachment and Loss – Separation, Anxiety and Anger*. London: Hogarth Press 1973.
- HARRIS, M., BUTTERWORTH, G. *Developmental psychology*. Hove: Psychology Press Ltd, 2002.
- KAGAN, J. *The Nature of the Child*. New York: Basic Books, 1984.
- SCHAFFER, D. S., KIPP, K. *Developmental Psychology: Childhood and Adolescence*. Belmont: Wadsworth, 2010.



16 PRESCHOOL AGE



Objectives

After studying this chapter you will be able to characterise the development of the child during preschool age. You will learn about the typical characteristics of the thinking, speech and play of preschool children. You will realise the importance of this period for the formation of a child's sexual identity.



Terms to Remember (Key Words)

- illustrative, intuitive thinking
- egocentrism of thinking
- magical aspects of thinking
- infant dyslalia
- egocentric speech
- cooperative play
- fantasy
- conscience
- gender identity

16.1

Definition of Preschool Age

Preschool age **starts at three and ends at six years**. The end of this phase is not strictly defined only by the age of the child, but primarily by the actual start of school attendance.

16.2

Development of Gross and Fine Motor Skills

A three-year-old child's movements are already exactly the same as those of an adult: walking and running on a level plane just as easily as on an inclined plane, taking very few falls, walking up and down the stairs without holding on to a rail or a person. In the preschool phase, **motor skills and coordination** develop even further; the child learns to jump down from a bench, walk on a narrow plank, and



climb a ladder and various playground structures. Physical prowess affects the preschooler's status within the peer group as children tend to compare each other in terms of speed, strength and agility in performing various exercises.

Manual dexterity also improves as the child learns to handle play blocks, modelling clay and crayons. At three years of age the child can copy a variety of lines and even a circle. At four years of age the child is able to draw a cross, with the square following at the age of five and the triangle at the age of six. Having scribbled something on a piece of paper, a three-year old retrospectively gives a name to his/her creation although it bears little resemblance to the description. The first attempts at human figures come out as 'cephalopods' – the child draws a head with legs and arms sticking out from its bottom and sides. A four-year old, however, achieves much more realistic results, including a torso. The child begins his/her drawing efforts with specific intentions ('I will draw a frog') although he/she may later give the drawing a different name ('it's an elephant'). Pictures drawn by a five-year old finally correspond to the initial idea and are much more detailed. Still, the child tends to draw things he/she knows about the subject rather than what he/she actually sees (i.e. ignoring the rules of perspective). Drawings of human figures typically have 'see-through' clothes as the child first draws the body and only later adds pieces of clothing over the figure.

16.3 *Development of Thinking*

Around the age of four the development of thinking moves from the pre-conceptual (symbolic) stage to a higher level of object-based **intuitive thinking**. A preschooler thinks in terms of concepts stemming from fundamental similarities although his or her thinking does not fully follow the rules of logic yet. Reasoning depends on the specific facts that are being observed.

Another external characteristic of preschool thinking is **egocentrism**, clinging to one's own subjective point of view and exhibiting a tendency to distort judgements based on subjective preferences. A preschooler is incapable of taking into account someone else's perspective and does not understand that a situation may be considered from different points of view.

Magical thinking is the tendency to include imagination in one's reasoning. Childhood magical thinking is manifested by **animism** (attributing animal-like properties to inanimate objects) and **anthropomorphism** (attributing human characteristics to inanimate objects). The child attaches the characteristics and motives of animate beings to the world and explains the world by analogy with his or her own model of actions. For example, the sun goes down in the evening because it feels sleepy; the table is bad because it hit me; and this car is sad because it is

broken. Another typical sign of preschool age is **artificialism**, the belief that somebody created the external world – somebody put the moon and the stars in the sky, somebody filled the pond with water, and somebody covered it with ice overnight.

An understanding of **special relations** develops – the preschooler understands the concepts of 'up', 'down', 'close' and 'far away' and starts to learn the difference between 'right' and 'left'. The child also begins to understand the **first mathematical principles**. He/she may learn to count up to ten and discovers the rules of proportionality. The acquisition of the **concept of time** is a slower process. The child tends to measure time in terms of specific events and regularly repeated phenomena, but the concepts of the 'past' and 'future' still lack precise content at this age. The child is preoccupied with the present and the future is of little importance, and this is often a nuisance as the child is in no hurry and must be repeatedly reminded of the many tasks which he/she must perform ('get dressed, we are going to the kindergarten').

16.4 *Speech Development*

The verbal skills of preschool children improve in terms of both content and form. They learn grammatical rules by imitation and start to speak in longer, compound and complex sentences. However, they still make many mistakes and suffer from **agrammatism**.

A three-year-old child usually remembers several simple rhymes and has a sufficient attention span to listen to short stories. Speech development allows the child to expand his/her understanding of the world and of him/herself. At the age of three the child already knows his or her full name and can name basic colours, and around the age of five he/she is able to give simple definitions of everyday objects. Also at this age, the differences between the skills developed by individual children are greater than their age differences.

Infant dyslalia and imperfect pronunciation of many words prevail in some children even into preschool age. Articulation skills continue to develop during the fourth and fifth year.

This is also the time of the '**second questioning age**' when preschoolers are most interested in how and why things are done. Children ask for explanations of the causes and functions of things, which enriches their understanding and vocabulary. During the preschool period a child's **active vocabulary** increases from approx. 1,000 words to 2,500–3,000 words.

Egocentric speech, i.e. the child talking to him/herself, is an integral part of speech development. It helps the child think better if he/she gives a spoken commentary to his/her own activities, gives him/herself advice while playing, plans tasks that lay ahead, and corrects him/herself. Egocentric speech changes over time until it eventually becomes an internal dialogue.

16.5 *Period of Play and Fantasy*

Play is no longer a matter of simple experiments with objects and various movements as it was during the toddler years. Preschoolers' games are much more complex, with a deliberate objective or intention. The playing child focuses on creating something new (building games) or trying out different social roles (thematic games – shopkeeper, mummy and daddy, soldiers).

Playing is crucial for the development of social skills – preschool children actually play together rather than alongside each other. For **cooperative play** to be successful, children need to master communication skills, collaboration and healthy self-assertion. Preschoolers organise their own games, set common goals and delegate roles, and each child contributes his or her particular share to the activity.

Preschoolers use their **imagination** in their games in order to satisfy, at least symbolically, their wishes. Imagination allows children to act out their wishes and force reality to adapt to their needs. Children make little distinction between reality and the world produced by their imagination. For instance, they satisfy their need for companionship by inventing imaginary playmates who become their partners in conversation and games.

With its rich imagination and magical thinking, preschool age is a time when most children develop a wide variety of **transient fears** and even **phobias**. The child still believes in supernatural beings and magic, is scared of monsters, etc. Between the second and sixth year, the average, healthy child develops approx. five specific fears, the most common being fear of insects, animals, bodily harm, thieves, darkness and ghosts. Fear of death joins other childhood anxieties between the fourth and fifth year (Garnezy, Rutter, 1983).

16.6 *Personality, Identity, Development of Conscience*

Self-image and identity is still largely influenced by the opinions of other people, especially the parents. A preschool child uncritically accepts the opinions of adults as

they are presented to him/her. A child develops its concept of identity by identifying with the parents, who serve as role models, and by identifying with any object that is in any way connected to the child. Ownership becomes an integral part of identity, which is why preschool children tend to be very possessive; they insist on owning certain objects and are reluctant to share them. At the same time, children should learn to respect the property of other people, to ask for permission before taking other people's things, and to thank people for letting the children use those things. The child's identity also starts to include all the social roles that the child has. New roles are added outside of the family framework, especially the **role of a kindergarten pupil** and the **role of a peer** in a group of children. A preschooler needs to be in contact with his/her peers in order to learn how to **communicate and assert him/herself in a peer group**. Adults and children of very different ages are not sufficient competition to challenge the child and to help him/her learn the virtues of cooperation, empathy, and keeping his/her own aggression and immediate needs in check. Prosocial behaviour depends on the achieved level of reasoning and mental abilities. Towards the end of the preschool period, the child is, to a certain extent, able to look at things from another person's perspective and to understand the needs of others.

The development of **conscience** is an important part of a child's socialisation process. This crucial personality component emerges exactly during preschool age. The child begins to realise what his/her obligations are, what he/she is not supposed to do, and why. The child **feels guilty** when he/she violates rules. E. Erikson's theory states that the biggest challenge for preschoolers is to deal with the conflict between initiative and feelings of guilt. However, conscience may become too strong and therefore crippling or, on the other hand, too weak. A preschooler is naturally inquisitive, active and full of energy, but is constantly running into obstacles and commands.

16.7 ***Gender Identity and Acceptance of Gender Roles***

During preschool age a child **definitely realises his or her gender identity and accepts his or her gender role**. Preschoolers know what a boy or a girl should look like and how each should behave. They accept their gender roles and adopt male or female patterns of behaviour and opinion, choosing gender-relevant toys, games and clothes and wishing to look as much as possible like other children of the same sex who are now their preferred play partners. Children start to refuse clothes and other items typical of the other sex. Boys especially emphatically refuse to look like girls.

Every culture strives to turn its children of the male and female sex into adult men and women. Atkinson (2000) identifies four theories that try to explain how children accept their gender roles:

Psychoanalytical theory – Sigmund Freud was the first psychologist to attempt a comprehensive description of gender identity. He describes the preschool years as the 'phallic age' at the end of which the child identifies with the parent of the same sex. A boy's identification with the father and a girl's identification with the mother then define the behaviour, attitudes and further development of the child's personality.

The **social learning theory** stresses the importance of reward for gender-relevant behaviour and punishments for its violations. Children learn by observing and copying adult models. Most people dress their sons and daughters differently and give them different toys from a very early age. Parents also have stereotypical expectations regarding their children's behaviour, treating boys and girls differently. All the above mechanisms drive the process of the child accepting gender roles through learning.

Theory of cognitive development – gender identity begins to develop between the second and the seventh year as part of the pre-operational stage of cognitive development. Around the age of two and a half years, we can see the emergence of a conceptual approach to gender identity. What makes children behave in a gender-relevant way is the motivation to act in accordance with their gender identity, rather than an effort to win the approval of others. A preschooler thinks: 'I am a girl (boy), so I want to do girl (boy) things.'

The **gender schema theory** focuses on the question of why children organise their self-image first and foremost around their gender. The cultural environment makes the child aware that the differences between men and women are so important that the child should see the entire world through this prism. The child is led to adapt to this gender schema, i.e. to view the world in gender terms.

The gender schema theory was proposed by Sandra Bem. In 1989 she published the results of her interesting research on 'gender constancy'. Children in the study were shown photos of a toddler and asked to identify the child's sex. One photo showed the toddler dressed according to its gender and the other photo showed the same child in clothes associated with the opposite gender. Children who correctly identified the toddler's sex regardless of the clothing had achieved gender constancy (Bem, 1989).

Adults usually treat boys and girls differently, but much greater scrutiny is devoted to gender-appropriate behaviour by children themselves. Boys, especially, are quick to criticise other boys who engage in girly activities (Atkinson, 2000). Despite the different theoretical perspectives on the mechanisms of gender identity development, we can confidently conclude that the acceptance of gender identity is a crucial theme of the preschool stage.



Review Questions

1. Please describe the typical characteristics of thinking in children of preschool age.
2. How does a preschool child perceive the concept of time?
3. 'Agrammatism' appears in the development of speech of preschoolers. Please explain this term and give examples.
4. How is infant dyslalia manifested?
5. What does 'cooperative play' mean and what is its importance for a child's socialisation?
6. What are the typical fears of preschool children?
7. Please characterise the preschool age from the perspective of E. Erikson's theory.
8. Please explain the term 'gender identity' and describe the ways it is formed in a preschool child.



Literature

BEM, S. L. Genital Knowledge and Gender Constancy in Preschool Children. *Child Development*, 1989, 60, 642 – 662.

GARMEZY, N., RUTTER, M. (eds.) *Stress, Coping and Development in Children*. New York: McGraw-Hill, 1983.

HARRIS, M., BUTTERWORTH, G. *Developmental Psychology*. Hove: Psychology Press Ltd, 2002.

SCHAFFER, D. S., KIPP, K. *Developmental Psychology: Childhood and Adolescence*. Belmont: Wadsworth, 2010.



17 SCHOOL AGE



Objectives

After studying this chapter you will be able to characterise the mental, emotional and social development of children of school age.



Terms to Remember (Key Words)

- concrete logical operations
- decentration
- assiduousness and diligence
- feeling of inferiority
- latency period

17.1

Definition of School Age

School age can be divided into several sub-stages. **Early school age** includes the start of the child's school attendance and continues roughly until the age of eight or nine. The major challenge of these years is adaptation to a new situation where the child is obliged to go to school. **Middle school age** is a relatively less dynamic developmental stage, starting at eight to nine years and ending at 12 years of age. It is rather a calm period without any major developmental events. The child gradually grows and develops in all areas. After the 12th year, the child enters **adolescence (older school age)**, which will be discussed in a separate chapter.

17.2

Development of Cognitive Functions

Jean Piaget describes the way of thinking typical of early school age as the phase of **concrete logical operations**. At this level, thought processes are always tied to reality, ideas or symbols with clear, concrete content. A child's reasoning is based on his or her personal experience. In the classroom it is useful to use practical teaching aids and to allow children to test what the teacher says with concrete examples or in

practical activities. Children accept reality as a given fact and feel no need to change it. They do not have their own critical opinions yet and do not question the authority of teachers and parents.

The process of **decentration** is of crucial importance, as it leads schoolchildren to overcome their subjective, egocentric view of the world and allows them to consider facts from several perspectives. Children learn to see the world through the eyes of other people. However, the decentration process is slow and it takes several years to overcome egocentrism.

Cognitive abilities develop as the child learns new things at school. Reading and writing drive the improvement of verbal skills; the pupil learns to split words into syllables and sounds and divide them into categories and recombine them. The child's vocabulary expands and schoolchildren learn new meanings of familiar words, which they use with deeper understanding. They begin to understand the fixed content of words that remains the same in different situations, such as in declension and conjugation. Numeracy also develops and the child learns basic mathematical operations. The child is already aware of the **permanency of the number** of objects regardless of how they are arranged. *For example, the child understands that there are always four cakes no matter how close to or far away from each other they are placed or whether they are lying next to or on top of each other.*

Around the age of eight, the child develops a more precise understanding of time. Children know that time is irreversible, that it proceeds in only one direction. They gradually learn to read the clock and to act according to the time. School demands foster the ability to learn in a focused way and develop memory skills. The child starts to use intentional memory strategies and slowly acquires the general 'learning to learn' strategies.

17.3

Emotional Development

According to the theory of E. Erikson, the typical child is **assiduous** and **diligent** during this stage. Children want to be successful and meet the expectations and demands of adults in order to remain in their good graces and maintain a positive self-image. This process is crucial for the development of the child's **self-confidence**. Good performance is the means of confirming one's value and a schoolchild wants not only to perform, but to perform well. Comparing oneself and one's achievements and skills (e.g. physical agility) with one's peers plays a key role in this process. Frequent failures and underachievement reinforce a **feeling of inferiority** and impotence.

Sigmund Freud describes early school age as the **latency** period, where sexual impulses are attenuated. Having resolved the internal conflict of the phallic stage,

the individual enjoys a period of relative stability, with his/her instinctive energy being channelled into schoolwork, learning and new activities.

17.4 Social Development

With the start of formal education, the child enters into new roles that drive the development of a number of abilities and skills. In **relation to the teacher**, the child assumes the subordinate role of pupil. There are fixed rules of communication with the teacher; the child must learn when he/she can and cannot speak, and what can and cannot be said. The pupil must obey these rules and is judged according to his/her behaviour. At the start of the school experience, the child becomes emotionally attached to the teacher and expects similar support to what he/she receives from the family. This emotional relationship helps the child feel confident and safe.

The relationship with the teacher changes as the child gets used to school and achieves a certain level of maturity. During the middle school period, there is no longer the emotional bond, because the child no longer needs it. What becomes much more important is whether the teacher's demands correspond to the accepted rules and whether the teacher is just in his or her evaluations.

In **relation to his/her peers**, the young pupil assumes the equal position of schoolmate. At the beginning of the first school year, the class is an internally undifferentiated social group and the child still focuses more on the norms defined by adults rather than on peer opinion.

The peer group and its internal norms and standards become more important in the middle school period. Appreciation by the peer group now follows internal group rules and is just as important as appreciation by adults. Around the age of ten, children stop tattling to teachers. The norms set by teachers give way to the norms set by the peer group. Not complaining to the teacher means showing solidarity to one's schoolmates and keeping one's standing within the group, which is a stronger motivation for the child than the need to stick to the rules defined by adults. **Peer group identification** is one of the milestones of socialisation. Up until now, the child identified with adults – mainly with his/her parents and teachers. The peer group teaches new behaviour to children. The peer group expects all children to act the same and whoever differs in any way is rejected.

At school the child gains important experience in building social relations in a peer group. Hinde (1987 in Harris, Butterworth, 2002) defines three levels of peer relation development:

1. interaction,
2. relationship building,
3. group building.

Friendship with peers becomes increasingly important at school. Bigelow (1977 in Harris, Butterworth, 2002) asked children of different ages to answer the question: 'What do you expect from your best friend?' Based on the answers, it was possible to define several stages of friendship building. At the age of seven to eight, friendship is usually founded on pragmatic motives: shared activities, living in the same neighbourhood, attending the same school, having similar interests, and playing the same games. Between the ages of 10 and 11, shared values become more important and children show and reciprocate loyalty. Around the age of 12, a deeper concept of friendship emerges based on mutual understanding and having the same secrets and interests. This phase continues into adolescence.

The child's identity still includes the family, which is accepted by the child as a matter-of-course. The **family** is important to schoolchildren, because it still provides for most of their needs. Bonds with parents remain very strong. Sharing their day-to-day life with and the permanent presence of parents who show interest in the child and are always available if the child needs them, are the basic prerequisites for a functioning relationship between parents and children of school age.



Review Questions

1. What is typical of the thinking of a schoolchild during the specific stages of logical operations?
2. What changes during the decentration process?
3. Please formulate some educational principles that could be used to avoid a feeling of inferiority in children.
4. Please describe the transformation of the relationship of schoolchildren to the teacher between the first and fifth grades of primary school.



Literature

HARRIS, M., BUTTERWORTH, G. *Developmental Psychology*. Hove: Psychology Press Ltd, 2002.

SCHAFFER, D. S., KIPP, K. *Developmental Psychology: Childhood and Adolescence*. Belmont: Wadsworth, 2010.

18 ADOLESCENCE



Objectives

After studying this chapter you will be able to define the period of adolescence and describe the characteristics of this age. You will become aware of the importance of adolescence for the formation of an individual's identity.



Terms to Remember (Key Words)

- Formal operations
- logical thinking
- fluid intelligence
- abstract thinking
- critical thinking
- introspection
- identity

18.1

Definition of Adolescence

Adolescence is the transition from childhood to adulthood. It starts around the age of 12 and ends at 19–20 years of age when physical development is complete. At this stage the young person reaches sexual maturity and develops an identity as an independent being (Atkinson, 2000).

18.2

Physical Changes

Adolescence begins with the appearance of secondary sex characteristics and is marked by the '**second physical transformation**' with growth spurts and the lengthening of limbs. The bodies of girls and boys become increasingly different, with girls figures rounding out and boys developing stronger muscles. The internal genitals grow and mature as well, gradually reaching **reproductive potential** in puberty.

There are significant **individual differences** among adolescents in terms of the onset of physical changes. At the same time, the process significantly affects the adolescent's feelings and his/her satisfaction with how he/she looks. Boys who mature earlier tend to be happier with the way they look than boys who mature



later. Early-maturing girls, on the other hand, tend to have lower self-esteem and are unhappy with their weight, especially within the context of thinness as an indicator of attractiveness (Atkinson, 2000).

At the end of adolescence, young people **match adults in terms of height and physical strength**. Boys, in particular, grow in height at a rapid rate, their bodies becoming manlier and with adult proportions. Girls' figures become curvier and take on a markedly feminine look. Being taller, practically as tall as adults, changes a young person's visual relationship with figures of authority and the adolescent no longer appears to be an inferior individual. Greater physical strength at the same time seems to confirm independence and boost feelings of self-confidence.

External appearance is very important for adolescents. Boys wonder whether their shoulders are broad enough and their muscles strong enough while girls wish they were thinner and more beautiful. Physical attractiveness drives the self-confidence of adolescents and is highly valued by the peer group. Good looks are important for achieving a good social position.

18.3 *Development of Thinking*

According to Jean Piaget, the 12th year marks the beginning of the phase of **formal logical operations**. The development of cognitive processes continues with an evolution away from thinking tied to concrete reality. Adolescents are capable of hypothetical thinking and can consider possibilities that do not exist in reality. **Abstract thinking** further evolves. Adolescent cognition newly involves **critical thinking** and disagreement with the opinion of adults. Adolescents have a tendency to argue and debate and their discussions are often highly emotionally charged, with radical opinions and reluctance to compromise. Abstract thinking is not tied to concrete reality and as such is not limited to the immediate present or experienced past.

Adolescents are capable of **thinking about their own future**, set themselves goals, and have an idea (a very idealistic one) of how they want to live and what they want to achieve. Adolescents devote a lot of thought to fundamental existential questions, the meaning of life, their worldview, and what lifestyle to choose, while at the same time critiquing the world of adults, which they find boring, routine, hypocritical, rotten or old-fashioned. They notice injustice and are interested in global issues, the society and morals. They search for real values and ideals and want to live a different sort of life than that offered by the society. An expression of their protest against the society is the adoption of alternative cultures and various means of self-expression.

The style of thinking further improves in late adolescence, which is characterised by a **flexibility and openness of thinking** as adolescents are not burdened with

experience and are able to think in new, different ways. This lack of experience often leads to overexcitement and rash, careless decisions. The experience of adults has little value in the eyes of adolescents, who resist even information that might prevent them from making mistakes. **Fluid intelligence**, the ability to solve logical problems in original ways unrelated to experience and based primarily on flexible thinking, is at its peak.

18.4 **Personality Changes**

The changing hormonal functions during adolescence result in changed experience and an increased **level of emotional instability**. Externally, emotional fluctuations are manifested by impetuosity and a lack of self-control. A low threshold of frustration tolerance, hypersensitivity and mood swings create many conflicts in personal relationships. Atkinson (2000) notes a **conflict between adolescence as a time of 'storm and crisis' and recent research** showing that the majority of adolescents survive this period without significant problems. *In this context, he mentions a study that followed more than 300 adolescents over a period of several years. The study found that 50% of boys and girls experienced adolescence as a relatively unproblematic period. About 30% of youngsters had occasional problems. Only 15% experienced serious emotional and academic problems, which may occur as early as in the 8th grade and continue or even deepen at the end of secondary-level education.*

Introspection develops during adolescence. It offers a new way of understanding oneself, focusing on one's feelings, experiences and thoughts and discovering one's inner world. This leads to **increasing secretiveness** and reluctance to show emotions to others. An adolescent loses emotional openness, considers feelings to be an intimate part of his or her personality and refuses to share feelings with others.

Adolescents often behave in ways that seem inappropriate to adults because of their **higher vulnerability** and sensitivity to personal criticism. The young person becomes hypersensitive and uses compensation mechanisms to get rid of unpleasant feelings.

E. Erikson considers adolescence to be a **period of searching for identity**. Physical and emotional changes happen independently of the person's will and the adolescent needs to find a new understanding of his identity. The previous sense of identity is changing greatly; one looks different than before, thinks differently, feels differently and gets different reactions from others. These changes lead to a feeling of insecurity and the adolescent needs to learn to accept himself/herself in this new form. The adolescent spends more and more time thinking about him/herself, trying to understand his/her own feelings, trying to learn more and more about him/herself, and focusing on his/her own looks and emotions. The results of this self-searching are not always fully accepted. The adolescent is not satisfied with himself/herself, is

often in doubt, is prone to self-criticism and thinks about what he/she could be like. Adolescents indulge in fantasies about their ideal self. They are absorbed in self-exploration and want to find answers to questions about who they are, where they belong, where they are going, and what the meaning of life is.

The adolescent tries to find a new identity by experimenting in a trial-and-error manner. The young person often changes hobbies and opinions and is on the lookout for new experiences. The need to develop one's own identity and the difficulties that come with it are often described as the **crisis of adolescence**.

The main task that the adolescent must face is to develop his/her own identity and find answers to questions like 'Who am I?' and 'Where am I going?'. Erikson's ideas were further developed by James Marcia (1980) who created a semi-structured interview with open-ended questions. He defined **four identity statuses** based on the answers. One's identity status depends on whether one perceives his/her own identity as problematic and whether he/she has found an identity solution.

Identity achievement – people with this type of identity have experienced a crisis and a period of active questioning and self-searching. They have adopted opinions and attitudes that they themselves arrived at and have chosen their profession. They have reconsidered the religious and political convictions of their families and abandoned those that went against their identity.

Foreclosure – people with this identity status have also chosen a profession, opinions and attitudes, but without experiencing their own identity crisis. They adopted parts of their own identity from figures of authority, e.g. they accepted the religious denomination of their family.

Moratorium – this status is typical of young people who are currently undergoing an identity crisis. They are still searching for answers and have not yet fully found their own identity.

Identity diffusion – some people in this category have experienced an identity crisis while others have not. In either case, however, they lack a stable self-concept. This status is analogous to Erikson's 'role confusion'.

R. Josselson (1980) understands identity formation as a process of individuality development in adolescents, which happens in four phases:

1. Psychological differentiation – the teenager begins to realise there are differences between his or her own personality and that of others, both peers and parents.

2. Practice and experimentation (14–15 years) – the adolescent believes he/she knows what is best for him/her and tries to extricate him/herself from dependence on formal authorities.

3. Rapprochement (16–17 years) – renewal of relationships with parents whose authority is now accepted selectively; greater acceptance of responsibility for one's own behaviour and its consequences.

4. Consolidation of self (late adolescence) – the adolescent realises his/her own autonomy and uniqueness, understands him/herself in a longer timeframe, and makes a connection between his/her own past, present and future.

The development of **identity** culminates in adolescence. The young person is absorbed in the discovery of his/her own self and searches for answers to identity questions – who I am, where I belong, where I am going, and what the meaning of life is. The adolescent tries to find this new identity by experimenting in a trial-and-error manner. The young person often changes hobbies and opinions and is on the lookout for new experiences. The need to develop one's own identity and the difficulties that come with it are often described as the **crisis of adolescence**.

The society provides adolescents with a kind of 'safe' space in time that allows young people to prepare for adulthood. There are certain obligations (school attendance, for instance), but also advantages. Some adolescents feel the need to postpone adulthood because it brings responsibilities and many restrictions, for which they do not feel ready. This need to remain in a transitional state and to stop further development is described by E. Erikson as a **psychosocial moratorium**. It is typically manifested by a refusal to take definitive steps (in a relationship, choice of profession) and an emphasis on freedom, independence and experimentation.

18.5

Social Relationships

The adolescent remains critical of his or her parents and feels the need to discuss contentious issues. Criticism of one's parents is one of the ways young people search for their own identity. Debate allows adolescents to clarify their own opinions and they, therefore, need to be taken seriously by adults in a discussion. They need to defend their position using logical arguments or accept their own shortcomings. Parents and teenagers need to learn to communicate as partners. The process of **separation** from a dependence on the family is completed towards the end of adolescence. The future development of the family relationship depends on the attitude of both parents and the personality of the adolescent. An unsuccessful emancipation can result in various situations, such as a persistent infantile role or, on the contrary, a complete disruption of contact with the parents. A normally progressing emancipation leads to the **renewal of a positive family relationship** and a good attitude towards their values around 20 years of age.

Peer relationships play a crucial role in the adolescent period, but the **peer group gradually loses its influence**. At the end of this stage, the adolescent is more

mature and confident and less prone to the uncritical acceptance of group opinions and norms.

Adolescents grow up to fulfil **romantic relationships**, including sexuality. The first sexual experience culminating in the first intercourse is a key milestone in the life of each adolescent. It represents one of the experiences that mark the **transition to adulthood**.



Literature

ATKINSON, R. L. *Hilgard's Introduction to Psychology*. New York: Harcourt, Inc., 2000.

HARRIS, M., BUTTERWORTH, G. *Developmental Psychology*. Hove: Psychology Press Ltd, 2002.

JOSSIELSON, R. Ego Development in Adolescence. In ADELSON, J. (ed.) *Handbook of Adolescent Psychology*. New York: Wiley, 1980.

MARCIA, J. E. Identity in Adolescence. In ADELSON, J. (ed.) *Handbook of Adolescent Psychology*. New York: Wiley, 1980.

19 YOUNG ADULTHOOD



Objectives

After studying this chapter you will be able to characterise adulthood, formulate the developmental challenges of young adulthood, and become aware of the importance of this period for the setting of long-term goals.



Terms to Remember (Key Words)

- mental characteristics of adulthood
- crystallised intelligence
- relational intimacy
- isolation
- starting a profession
- professional stabilisation

19.1 *Definition of Young Adulthood*

Young (early) adulthood is the period roughly from **20 to 35 years** of age. The main developmental tasks in this stage include becoming fully independent of one's parents, strengthening one's adult identity, identification with the role of an adult, clarification of personal goals, acceptance of professional roles, and establishment of a stable partnership and a family.

19.2 *Transition from Adolescence to Adulthood*

In our society, there are no clear-cut rituals or conventions marking and certifying the **beginning of adulthood**. Biological adulthood depends on the body's achieving physical maturity at a certain age. Formulating a psychosocial definition of adulthood is more problematic as individuals reach this type of adulthood at different times (Santrock, 2012).

The **psychological signs of adulthood** may include independence and greater self-confidence, relative freedom of decision-making and action, the ability to take on responsibility for one's relationships with other people, and responsibility for one's own decisions and actions. An adult exercises better self-control and is able to give priority to the needs of others over his/her own needs and limit his/her own egocentrism.

19.3 *Development During Young Adulthood*

A young person reaches the **peak of physical strength**, energy and maximum performance at this time.

Cognitive development at this stage is influenced primarily by personal experience, which leads to an **overcoming of a black-and-white view of the world**. The young adult is now aware that many situations may be resolved in different ways and it is often impossible to tell what is right or wrong. The individual realises the multiplicity of life experiences and is able to compromise and support solutions that are acceptable from more perspectives or for more people.

Experience also drives the development of **crystallised intelligence**, which can continue to increase in a mentally healthy individual up to the age of 60. Crystallised intelligence includes learned cognitive tools, well-processed concepts and reliable problem-solving strategies.

Adolescent brooding disappears or greatly diminishes and the adult person becomes **pragmatic** and **realistic**, being more extrovertly realistic, giving more attention to practical tasks related to his or her professional role and personal relationships. Young adults still tend to entertain **optimistic hopes** or illusions and think of unlimited possibilities without 'seeing' as far as the end of their lives, which appears very remote.

19.4 *Developmental Tasks in Young Adulthood*

In their twenties, young adults face great challenges. They make **serious decisions about life-long obligations**, which tend to be reviewed later around the age of thirty (West, 1995).

According to Erikson, the developmental challenge of young adulthood is to achieve **relational intimacy** and build long-term stable partnerships. Intimacy with a partner requires people to open up, show tenderness and love, and trust and respect the partner. Young adults must learn to love their partners with all their faults and to share plans for the future. According to Erikson, the opposite of intimacy is **isolation**. An individual who is not mature enough to build a partnership finds him/herself gradually isolated as his or her peers enter into marriages and found families. However, emotional isolation may happen even inside a marriage if the couple fails to achieve a certain level of intimacy.

An adult is no longer dependant on the original, orienting family. **Relationships with parents change** and become calmer and more symmetrical. A young adult is able to view his/her parents in a more objective and realistic light (being neither uncritically positive like a child nor negativistic like a teenager). He/she is able to appreciate their experience and accept their advice and even follow their advice if he/she believes it is good and useful. Relationships with the father and mother also mature as the young adult becomes a parent, and this experience often leads to greater intimacy and better understanding between generations. Having **founded a family and produced a child**, the young adult becomes a true equal of his or her parents, realises the difficulties and responsibilities that come with parenthood, goes through the same experiences as his or her parents did, and has more sympathy for their attitudes and actions that formerly seemed pointless.

In terms of professional development, early adulthood is a time of **fledgling careers**. The young person gets his/her first job, which is often marked by a reality shock. It takes a certain period of adaptation for young people to develop more realistic professional expectations. The first job is often seen as a temporary position, a source of experience and clarification of how to proceed in one's career. The second and subsequent jobs are chosen in a more focused way, taking into

consideration career-growth potential. When the young adult finds a job that meets his or her requirements and that offers a chance for professional development, he/she enters a phase of **professional stabilisation**. The young person intensively works on turning plans into reality, and professional growth and career become his or her priorities.



Review Questions

1. What can be regarded as the mental characteristics of adulthood?
2. Please describe the development of thinking during young adulthood.
3. Please explain the formation of relational intimacy according to E. Erikson's theory.
4. How does one's relationship to one's parents transform during young adulthood?
5. What stages of professional development can be seen during young adulthood?



Literature

CARR, D. (ed.) *Encyclopedia of the Life Course and Human Development*. Boston: Gale Cengage, 2009.

WEST, G. K. *The Greatest Adventures in Human Development*. New York: Taylor & Francis, 1995.

SANTROCK, J. W. *Essentials of Life-Span Development*. New York: McGraw-Hill, 2012.

20 MIDDLE ADULTHOOD



Objectives

After studying this chapter you will be able to describe the period of middle adulthood and realise the importance of this period for the fulfilment of the need for generativity.



Terms to Remember (Key Words)

- lifecycle
- biological age
- chronological age
- crystallised intelligence
- midlife crisis
- individuation
- need for generativity

20.1

Definition of Middle Adulthood

The middle adulthood period is the period from **40 to 60 years of age**. It is the peak of productivity and a time when individuals try to fulfil their generative needs. At the same time, the adult realises that he/she has already lived through half of his/her life and starts to feel the first signs of aging (Schaffer, 2012).

20.2

Physical Changes

During middle adulthood people start to notice the **first signs of physical aging** along with a loss of physical attractiveness. Men see their first white hair after 40 and women worry about wrinkles, less supple bodies and accumulating body fat. Many start to give more thought to healthy lifestyles and pay more attention to and care for their bodies.

The pace of aging is highly individual and does not affect physical functions equally. Therefore, we speak about someone's **biological age**, measured by the actual level of physical and mental function, and his/her **chronological age**, measured in the number of years. The biological age depends on genetics as well as diseases and the environment. The biological age does not necessarily correspond to the chronological age – all people do not age at the same rate.

At the end of middle adulthood, **women's reproductive period ends** – women experience menopause, caused by dropping levels of oestrogen. Menopause brings with it a number of physical and psychological reactions. Women complain of greater tiredness, headache, hot flashes, sweating, dizziness, heightened anxiety, moodiness, depression, and loss of energy. Many women see menopause as a negation of their feminine role while others are relieved because they no longer need to bother about menstruation and the risk of pregnancy. Male aging is marked by a more gradual loss of hormonal production and there is no clear break in the reproductive potential, which lasts into old age.

20.3 ***Cognitive Development in Middle Adulthood***

Cognitive development is based primarily on gaining new experience and enriching **crystallised intelligence**. Cognitive abilities do not radically change yet, and repeated tests on the same individuals show that intelligence stays at the same level until 50–60 years of age. The quality and structure of the intellect in adults increasingly depends on experience. To a great extent, cognitive abilities in late adulthood are the result of individual factors. More than physiological changes, it is education and the type of profession that influence the intellectual performance of adults. Persons with lower levels of education show a quicker decline in cognitive abilities with increasing age than people who went to school longer. The higher one's education, the higher also the effort to increase one's qualifications. Professions that demand constant mental strain also nurture the further development of mental abilities, especially cognition and finer conceptual and outlook differentiation. On the other hand, professions that require a minimum of mental input have a negative effect on intelligence. All studies and research prove that constant and adequate mental activity, and in particular learning, is the safest defence against aging.

20.4 ***Lifestyle in Middle Adulthood***

The **lifestyle** of middle-aged adults is highly varied today. Some are mainly preoccupied with their maturing offspring while others are only now starting their own families and still others are only now 'maturing' and accepting their own adulthood. **Life in modern societies has lost a clearly defined lifecycle pattern**. Many important life events no longer happen in their previously logical order, are put off until later in life, or are completely omitted. On the one hand, this

trend gives people more freedom and control over what social roles they are willing to assume, but, on the other hand, this can lead to a loss of certainty and the obligation to **assume responsibility for one's life** (Sheehy, 1974).

Today's 40-year-olds often find themselves in situations that put excessively **high demands on their performance and psychological resistance**. They need to provide for their children and come to terms with their flying the nest while also caring for their aging parents and sometimes even having to make decisions on their behalf. They thus accumulate many different roles, obligations and responsibilities to others.

20.5 *Midlife Crisis*

Middle adulthood also marks the middle of the average human life and this important milestone is often connected with a **midlife crisis**. It comes in the form of a heightened awareness of time passing, the limited number of years still to come, and one's narrowing personal possibilities. A 40-year-old evaluates his/her past and takes a critical look at his/her life to date with regard to his/her professional position, family, partner, children, health and appearance. He/she compares his/her present situation with his/her former aspirations and judges to what extent they have been achieved. Any future plans must take into account the fact that one is entering the second half of one's life. The adult must accept time limitations and adjust his/her plans to reflect reality. One may feel that life is boring and routine and desire a change and new beginnings. The midlife crisis is an occasion for realising that one has one last chance to change things. People who are more dissatisfied may make decisions with the aim of changing something. Some people turn their professional lives upside down or drastically change their appearance while others begin relationships with new partners and leave their families.

Identity, a topic previously pondered in adolescence, becomes an issue again in middle adulthood. The adult now needs to reconsider his or her own identity and find new alternatives that would be acceptable for an aging person. The individual changes his or her worldview, self-image and many values. A typical development is the abandonment of conventions and the formal performance of expected roles. The adult no longer wants to waste his/her time with 'unimportant' things and external success and searches for the true meaning of life. Finding one's own way and attention to personal values require **introspection**. Middle-aged people tend to be more introverted, needing more time alone to question themselves and their feelings, thoughts and personal issues. The search for one's own internal world results in a sharper definition of identity, a process which C. G. Jung (1960) calls **individuation**. The adult becomes increasingly individualistic and disregards conventions as he/she

is less dependent on others and their opinions and relies more on his/her own ideas and needs.

20.6 *Need for Generativity*

Plans for the future are influenced by the **need for generativity** described by Erikson, i.e. the urge to create something of subjective importance and value that could confirm self-worth. The midlife crisis is usually better dealt with by people who have something or someone to live for. The need for generativity may be fulfilled in the adult's **professional role** that produces valuable and useful results even for further generations. **Family** is highly important in terms of generativity as it is the main source of satisfaction and life fulfilment for most adults. Satisfaction eventually prevails over the constraints that adults often feel in their family life and childcare.



Review Questions

1. Why is middle adulthood regarded as the peak of productivity?
2. Please describe the term 'midlife crisis'.
3. What are the first manifestations of physical aging that one starts feeling during middle adulthood?
4. Please explain the term 'individuation' as perceived by C. G. Jung.
5. How is the need for generativity manifested during middle adulthood?



Literature

CARR, D. (ed.) *Encyclopedia of the Life Course and Human Development*. Boston: Gale Cengage, 2009.

JUNG, C. G. *Collected Works, 1902–1905*. Routledge & Kegan Paul, 1960.

SANTROCK, J. W. *Essentials of Life-Span Development*. New York: McGraw-Hill, 2012.

SHEHY, G. *Passages – Predictable Crises of Adult Life*. New York, 1974.

21 LATE ADULTHOOD AND OLD AGE



Objectives

After studying this chapter you will be able to describe the physical and cognitive changes that take place in an individual during late adulthood and old age. You will be able to explain terms such as 'integrity' as well as the contexts helping to achieve integrity.



Terms to Remember (Key Words)

- early old age
- true old age
- longevity
- integrity
- gerontology
- gerontopsychology

21.1

Definition of Late Adulthood and Old Age

The late adulthood period starts at **60 years** of age (Santrock, 2012). Aging quickens and all physical functions are affected. According to the World Health Organisation, the period may be divided into **early old age** (60–75 years), **real old age** or advanced age (75–90 years), and **longevity** or high age (over 90 years).

Gerontology is the science of the biological, psychological and sociological aspects of aging and age. The psychological aspects of aging, especially adaptation problems and falling levels of intellectual performance, are the subject of **gerontopsychology**.

In terms of its value system, modern society views old age as a time of loss, general decrepitude and a declining quality of life. **Old age is understood as the simple absence of youth.** Old people have low social status. The society places no demands on them and considers them to be less able, incompetent and useless. Old people are considered to be a burden on the society, an age group of great needs and no contribution. Such negative attitudes toward old age may stem from poorly processed fears of one's own aging, which is viewed as something undesirable. There is a special term for prejudices against old people and aging – **ageism** (Carr, 2009).

Old people are now the fastest growing demographic group. Advances in medicine have extended the span of human life and **more and more people live to old age**. However, having a longer life does not necessarily mean that the **quality of life** is maintained, as it depends on social and material conditions.

21.2 *Physical Changes*

Physical changes connected to the onset of old age are now apparent at first sight. People start to look different, with more wrinkles, grey hair and sagging skin. An aging person becomes physically unattractive according to the present-day norms, which is especially painful for women, who feel a loss of prestige connected with their former beauty and youthful look. In men, silver hair and wrinkles are often seen as interesting and attractive.

In late adulthood the **basic sensory functions, vision and hearing gradually deteriorate**. The eyes lose their accommodation capabilities and people increasingly suffer from near-sightedness and must wear glasses. The quality of hearing changes as well, with people losing the ability to hear high-pitched tones and having difficulties with listening. **Physical strength** and coordination deteriorate and **reaction time and speed** decrease.

A variety of **health issues** and **chronic diseases** (diabetes, hypertension) appear at this age. The individual becomes acutely aware of his/her own vulnerability and mortality; dying is associated with old age and the **fear of death** is revived especially when a close relative, friend or peer dies.

21.3 *Cognitive Changes*

Cognitive abilities and **immediate performance** diminish with increasing age. This decline in performance is driven by lower mental flexibility, fluctuation in the attention span and short-term memory, and slower reactions. Knowledge, experience and learned cognitive strategies may compensate for the loss of mental flexibility, memory and recall. It is still possible to **learn new things** at this age and develop new skills. However, acquiring new knowledge takes a longer time due to the slower pace of learning.

The level of cognitive abilities changes during old age. **Sensory perception deteriorates** and the elderly need to exert more effort to focus their attention, to see properly and to hear all they need to hear. This puts a **greater strain on attention** and increases tiredness.

People lose a large part of their **ability to remember and recall** things from memory and have an especially hard time recalling things from short-term memory. For instance, old people do not remember whether they took their medicine in the morning, but they have no trouble remembering events from their childhood. General knowledge and information stored in long-term memory are longer-lasting and better remembered by old people. Memory loss may be partly kept in check by the regular use and training of memory functions.

Similarly, people of higher intelligence and those with intellectual jobs tend to maintain their **cognitive abilities** at the same level. The loss of intellectual abilities more often affects fluid intelligence, i.e. the ability to process new information and find new solutions, whereas crystallised intelligence, i.e. the knowledge and thinking strategies learned earlier in life, is maintained longer.

21.4 *Integrity*

From the perspective of Erikson's theory, the main developmental task of old age is to come to terms with one's own life and achieve life **integrity**. Achieving such integrity means accepting one's life as a whole and understanding its wider meaning. Old people who evaluate their own life positively are more likely to accept their own end and mortality.

It is easier to achieve old-age integrity if the person successfully managed to perform all the tasks he/she faced during the previous stages of development. The value of the results of the generativity, even-mindedness and security gained through intimate relationships also helps in the process. A failure to fulfil the developmental task of old age leads to dissatisfaction with one's life and a feeling of despair due to the inability to live one's life over again in a more satisfactory manner.

'Reviewing one's life brings sadness to old people who were unable to meet the challenges of life or failed in the great adventure of human development. They cling to what they miss and regret broken relationships, the years wasted in idleness, missed opportunities, voyages not made...' (West, 2002)



Review Questions

1. Please explain what 'biological age' and 'chronological age' are.
2. Please define the following terms: 'early old age', 'true old age' and 'longevity'.
3. What discipline is concerned with the psychological aspects of old age?

4. Please explain what 'ageism' is.
5. Please characterise old age from the perspective of E. Erikson's theory.



Literature

BIRREN, J. E. (ed.) *Encyclopedia of Gerontology*. San Diego: Academic Press, 2007.

CARR, D. (ed.) *Encyclopedia of the Life Course and Human Development*. Boston: Gale Cengage, 2009.

SANTROCK, J. W. *Essentials of Life-Span Development*. New York: McGraw-Hill, 2012.

WEST, G. K. *The Greatest Adventures in Human Development*. New York: Tailor & Francis, 1995.



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