Cognitive Aesthetics

Renáta Kišoňová

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Content

1. Introduction

In the presented university textbook called *Cognitive Aesthetics* we are to deal with a specific field of aesthetics which has not been un-equivocally determined and different interpretation, methodology and significance are assigned to it by a number of authors. There-fore, it would be appropriate to determine the field of cognitive aesthetics to a reader right at the beginning. What does it actually mean if a certain approach in the field of aesthetics is *cognitive*?

One group of aestheticians (for instance Nick Zangwill) assume that an aesthetic judgement can be true or false. On the other hand, others assert that a value of aesthetics is cognitive itself: it means that we create, perceive and are fond of works of art be-cause we can get to know something through them. Such approach can be found, for instance, in an aesthetic theory of Noël Carroll or Nelson Goodman (although a little different one). Yet, what we cognise thanks to art is ambiguous and remains a subject of dis-putes. This meaning of cognitive aesthetics we are to develop in the first chapter of the presented text. Moreover, in the field of contemporary aesthetics we can come across such terms as *empiri-cal* or *scientific aesthetics*. It is a discipline whose platform is not completely philosophical anymore; it applies also exact sciences for solution of issues and works with outcomes of experimental researches especially of cognitive sciences, neurosciences but also biology, chemistry, etc.

From the second to fifth chapter we focus on *aesthetic percep-tion, creation of a work of art* and *creativity* while psychology of

art represents a foundation of these researches. The sixth, seventh and eighth chapter are dedicated to empirical (scientific) aesthetics. The last chapters discuss a problem of comprehension of a work of art and significance of art for our life.

2. Clarification of Terms. Historical Excursus

Key words: *aesthetics, cognitive aesthetics, intentionality, hermeneutics*

2.1 Etymology of the Term Aesthetics

Aesthetics as a term for an independent philosophical discipline was introduced in the work *Aesthetica* written by Alexander Gottlieb Baumgarten. What is an etymological definition of aesthetics? The Greek word *aisthanomai* means "to perceive through senses", the substantive *aesthesis* means "sense perception" and finally the adjective *aisthétikos* is translated as "related to sense perception" or "what is perceivable". It follows that Baumgarten' s term aesthetics means "science dealing with sense cognition". However, from Baumgarten' s point of view, this "sense cognition" does not refer only to senses but also covers emotions and imagination. For him aesthetics represents science whose subject — beauty — is perfection of things. It brings pleasure only if it is perceivable by senses. According to this definition, we perceive beauty not by our brain but by senses.

2.2 Historical Excursus of Cognitive Aesthetics

Immanuel Kant explicitly refused a concept that an aesthetic judgement would bring any knowledge about an object. (Kant, 1975) During the 18th and 19th centuries, other thinkers opposed this opinion. For instance, Baumgarten considered aesthetics

a part of gnoseology which deals with sense cognition, contrary to logic which focuses on rational cognition. Baumgartner determines the term beauty itself through objectives of aesthetics — its goal is perfection of sense comprehension because perfection represents beauty. In his text *Aesthetica* he defined aesthetics as an independent philosophical discipline. He considers emotion to be vague, confusing cognition whose source is intuition. By contrast, there is rational logical cognition whose goal represents the truth. Arthur Schopenhauer based his understanding of art on comprehension of human cognition. According to him, the purpose of art is to make cognition of world ideas easier (in Platonic sense). (Schopenhauer, 2007) As Hegel asserts, art besides religion and philosophy represents a moment of absolute spirit and embodies one of the highest manifestations of the truth. In his aesthetic concept beauty and truth do not oppose each other; beauty has also a cognitive function. Such approach prevailed in the 20th and 21st centuries. Cognitive aesthetics in the 20th and 21st centuries offers a wide range of methods, streams and thinkers who in spite of significant dissimilarities are united by a requirement to assign a value of truth to art. (Perniola, 2000)

2.3 Aesthetics as Intuitive Cognition

In the 20th century B. Croce made a significant mark in history of cognitive aesthetics. In texts *Aesthetics as Science of Expression and General Linguistic* and *Breviary of Aesthetics* he introduced his aesthetic conception in which an assertion that intuition and expression are identical and cannot exist without each other represents the central theme. According to him, intuition without expression is inconceivable — and thus he opposes assertions claiming that we are rich in internal experience but not able to express it. There is nothing like ideal, pure beauty which could do without expression. This proposition of Croce does not refer to technical or naturalistic comprehension of art — aesthetic experience is not about external expression, reproduction, communication and other practical techniques. From Croce's classification of two forms of mental abilities — theoretical one consisting of an aesthetic and logical form and practical one into which he categorizes an economic and ethical form, follows that aesthetics, according to him, has nothing in common with practice; it is a completely theoretical matter (because cognition arises from theory). He refuses theories connecting aesthetics and practical actions, openly rejects, and disapproves especially of determination of "moral requirements" in the field of art. According to him, classification of works of art into moral and immoral is equally senseless as to think about a quadrate or a triangle as being moral or immoral. (Croce, 1927)

A picture, a sculpture or a music composition are not immoral, praiseworthy or contemptible. When distinguishing between rational and intuitive cognition, Croce applies a criterion of reality — rational cognition is realistic while intuitive cognition does not assess whether a music composition or a sculpture is realistic. He criticises also classification of art into valuable and valueless. Let us mention also non–standard identification of a spirit of genius and taste, i.e. creative activity of an artist and reproduction activity of a consumer. In his opinion, both of them are participants of identical intuition. Thus, Croce can bravely declare that perception of a work of art equals to activity of a poet, sculptor, painter, etc.

Only rarely in history of aesthetics has pleasure arising from art been evaluated so highly. Croce takes into consideration intelligent audience and educated artists; an essential contribution of his aesthetics is that he spread existence of theoretical experience which is completely independent between the true and false. Thus he preserved free character of art. (Perniola, 2000)

2.4 Aesthetics as Intentional Cognition

The Polish phenomenologist Roman Ingarden also attempted to answer the question: What type of cognition does art provide?

In what sense can we, according to him, speak about the truth in a work of art? In Ingarden's viewpoint, the truth of art resides in an intrinsic connection leading to intuitive self–presentation. (Ingarden, 1989)

Due to Ingarden's phenomenological orientation this assertion sounds paradoxically. A foundation of a phenomenological method represents intentionality i.e. the opposite of autoreference. Ingarden helped himself by distinguishing between metaphysical properties and a work of art which, according to him, does not embody an independent ontological entity. It lacks a degree of independence which represents autoreference. Ingarden's aesthetics attempts to emphasize an intentional character of a work of art (he focuses especially on a literary work — a paper: *The Literary Work of Art*). He divides a literary work into four heterogeneous layers — a vocal linguistic formation, meaning unit, schematised aspects and portrayed objects.

In Ingarden's opinion, aesthetic experience bears in itself certain separation from reality; i.e. for instance a statement which occurs in a literary (musical, fine art, etc.) work has only a quasi judgement character. Also a German thinker Nicolai Hartmann pondered on a cognitive character of aesthetics. He assigns the cognitive role only to aesthetics as philosophical science dealing with beauty and does not apply it either to a creator or a percipient of a work of art. According to him, artistic experience as such does not represent means of cognition; art does not have anything in common with cognition, it is only an object of certain knowledge which neither an artist nor a user need — it is aesthetics. Hartmann's theory thus preserves the intentional character of art which cannot be identified with its object.

Husserl's call to turn "to things as such" is notable here and along with it Hartmann leads us back to a real subject of perception, as vision which has not been yet aesthetic introduces it to us. Plato, Platinos and later Ficino believed that beauty is something independent of perception and a real object; considered it to be something supersensible. On the contrary, Hartmann asserts that a real fact is necessary for aesthetic experience, represents its foundation and distinguishes it from philosophy. Except for this foregrounding (*der Vordergrund*) of a work of art, he introduces also a so–called background (*der Hintergrund*) which is equally objective as the foreground. Nonetheless, it is not real; we could define it more closely as "imagination". Beauty then bears in itself two ways of explanation — it is real on its sensuously perceivable level and irreal in its supersensible span. Yet, the objective of phenomenological aesthetics is not gnoseology — it is rather ontology of a work of art.

2.5 Art as Hermeneutic Cognition

The German thinker Hans Georg Gadamer arrived at one of the most radical identification of art with philosophical cognition. In his text *Truth and Method* he sharply criticised Kantian aesthetic and every type of aesthetics derived from it. Kant classified artistic experience and employment of critical taste into the field of subjectivity and feelings. Gadamer refuses Kant's tendency to lay foundations of aesthetics without a guarantor of speculative thinking. However, he equally rejects also aesthetics of life and aesthetics of form (he sees both as products of Kant's aesthetics). According to him, the aesthetics of life is a consequence of exaggerated worshipping of a subject, life and naturalness (Bergson). On the other hand, the aesthetics of form considers a symbol to be a living form and thus it basically does not disengage from aesthetic vitalism. Aesthetics has to make space for hermeneutics — every perception of art represents an interpretation. Even, also every type of fine art itself is an interpretation, reproduction, promotion and stance. A connection between art and cognition is not subsequently determined by philosophy but by an artist who acts as a hermeneutist. Thus Gadamer excluded any subjective self–will, for him hermeneutic comprehension does not represent a subjective activity of

an individual but their involvement in a historical process in which the past and present converge.

2.6 Other Manifestations of Cognitivism in Classical Aesthetics

Other manifestations of cognitive aesthetics includes comprehension of art as symbolic cognition which was elaborated, for instance, by Ernst Cassirer who similarly as other already mentioned authors refuses vitalism. In his view, cognition never represents a reflection of external reality but continuous construction of symbolic structures. Different cultural productions — science and art — share a cognitive function which should be clarified by philosophy. Also Theodor W. Adorno's aesthetic concept asserting that art is also cognition can be classified among cognitive aesthetic conceptions. All aesthetic problems turn into questions connected with truthfulness of works of art. The truth of a work of art is often scandalous or even incomprehensible owing to the fact that a work of art consists of various contradictory aspects which cannot be overcome by peaceful, harmonious vision. A French phenomenologist Maurice Merleau — Ponty concentrated his reasoning on perception i.e. an initial moment of cognition. He sees art as a truth–bearer and also philosophy can arrive at it. Art as well as philosophy are cognitive disciplines relying on "things themselves", on experience. In the paper *Eye and Mind*, Merleau — Ponty claims that a painter provides visible existence to what vision usually considers invisible. For him vision means to touch and be touched. Feelings and thinking, senses and intellect are homogenous in the cognitive function which leads to the heart of matter. (Merleau — Ponty, 1971)

In spite of plenty of conceptions comprehending aesthetics as the cognitive discipline in which beauty is considered to be a truth–bearer, aesthetics, aesthetic experience and aesthetic perception are frequently seen as a domain of emotions, and cognition is completely excluded. Therefore, it is proper to raise a question whether it is possible and correct to ponder on aesthetics as the cognitive science? A creator of confrontation between aesthetic and scientific experience was Nelson Goodman who assumed that art and science represent research which has exclusively a cognitive character. He rejects vitalistic emotionalism — feelings connected with aesthetic experience are not silent and even not at all contradictory to emotions which we experience in a real life. According to Goodman, feelings are not in a conflict with cognition because even emotions functions cognitively.

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SOLSO, R.: *The Psychology of Art and the Evolution of the Conscious Brain.* The MIT Press, 2003.

3. Aesthetic Perception

Key words: *perception, aesthetic comprehension, apperception, aesthetic response*

Aesthetic perception does not represent only sense perception of a work of art (for instance, only auditory listening — auditory listening without interest), i.e. perception, at the same time, in perception we also apply cognitive elements, experiencing of the listened or seen and assessment. All these aesthetic perception elements are termed as aesthetic response. In a creator — percipient communication sequence, a content of art gets uncovered and a percipient decodes a content of a work of art in order to experience it emotionally on a basis of its cognition and explanation (interpretation, comprehension of a work of art). Emotional experience basically embodies completion of perception and cognition of a work. Aesthetic perception requires a human being prepared for an act of perception. Preparedness can be achieved either by constant encounters with an artefact whereby the percipient's evaluation scale improves and stabilizes, or by focus — i.e. a contact with art and further through educational courses. Semantisation — search for meaning supports aesthetic focus, points out to a content, highlights and semantises an artistic value of a work in order to make perception of a work something special (e.g. in preparation for perception of a work of art, we can create an intentional atmosphere verbally or through environment and draw attention to an act of aesthetic perception).

3.1 Perception — Apperception — Response

Although all terms are related to perception their content differs in some details. Perception: as Démuth asserts, *"in English perception denotes a process (or a result of a process) through which sense data are selected, organised and interpreted in form of conscious experience. However, a problem resides in the fact that a Latin term "perceptio" from which English "perception" is coined represents in a basic meaning "a collection", "collecting", and Latin "percipcio" especially "to catch", "to grasp"; 2. "to collect"; 3. "to accept", "to get", thus, just those terms evoking rather a primary contact with reality than its subsequent processing."* (Démuth, 2013, p. 26)

Perception is based on perception of reality and acquisition of information via receptors. The first two perception elements through which a human being touches cultural and biological environment are percept and emotions. Emotion is elementary and primary and is realized only after the percept (e.g. when perceiving music, the hearing organ through which we perceive external tone and sound stimuli and certain percept and their emotions represents a basic receptor).

3.2 Apperception

Apperception covers psychological processes taking place on a higher level than during perception. It is a process during which we grasp not only sense character of music but also penetrate into its content. During the apperception process, we distinguish two basic modes of perception:

1. Observation — (perception) of already known or yet unknown work, its tectonics, internal structure (melody, harmony, instruments, parts, etc.). This observation means, this certain property of an individual as a sense of extent of observation will help us to penetrate into the work content, yet not sufficiently.

2. Tuning into a work of art (for instance into music) — to put it poetically, we let ourselves be revealed in art (music), let ourselves go, get carried away, plunge into it and so on (e.g. embodiment of music by a musical interpretation, interpretation of a song that is very familiar to us, etc.).

These two essential modes create a prerequisite for evaluation judgements of perceived works, assessment of their tectonics, content but as well interpretation. They become the first aspect of processual activity of an individual termed as aesthetic perception.

In the following text we will attempt to sketch a problem of aesthetic perception from a perspective of knowledge coming from the psychology of art. Art is not created only by a painter but together with him also by the one who looks at his pictures. (Mikš, 2010) If we want to speak about artistic or more precisely aesthetic perception, we always have to bear in our minds that it is a process which is composed not only of pictures but also of their "reading". (Mikš, 2010) In Art and Illusion, Ernst H. Gombrich mentions reasoning from Philostratus' Life of Apollonius of Tyana. A neo–Pythagorean philosopher Apollonius discusses a role of art with his student Damis and in the debate reminding of a Socratean dialogue they come to a conclusion that there are two types of mimetic art: "One lies in use of hands and mind through which we create imitations and the second one in creation of images in mind itself." (Flavios, 1972, 188–189) A percipient looking at a picture has to have the ability of imagination because no one would praise a painted horse or bull if he did not have an image of an animal which they resemble in his mind. (Flavios, 1972) And that is the problem we are interested in — everything what we "see" in pictures depends on our ability to (re)cognise it in images which we have in our minds. As Gombrich assumes, if an artist attempts to make us see the visible world in his works, he will always rely on percipient's knowledge and the faculty of imagination. There is a well–known case of a neurologist Oliver Sacks: fifty–year old Virgil was blind for most of his life, nonetheless, doctors healed him. However, it did not mean that by restoration of a function of his eye they restored also his ability of visual recognition of the world. He was not able to recognise basic shapes and even static objects caused him trouble; yet he suffered most when recognising pictures — he was not able to recognise either people or objects in photographs. He could not recognise a meaning and a sense of a visual representation. He perceived all pictures only as colourful spots. When we showed him motionless photographs, he did not succeed. He did not see either people or objects; he did not comprehend the idea of picture. (Sacks, 1997)

What we have been pondering on so far is the phenomenon of vision and perception. When perceiving, we select information from our surroundings which can be considered necessary from the point of view of performed activity, while we comprehend visual information as stimuli. We recognise the seen, or rather re–recognise; i.e. recognition. In other words, what we see should make a certain sense to us; we should also know what we see. Let us introduce again a well–known example: let us imagine that we appeared on an unknown planet. Our vision would identify certain objects within a field of percept by grouping. It would centre a visual field to a figure or figures and background and we would distinguish various shapes and colours or space–time characteristics and motions. (Kulka, 2008) However, the problem resides in the fact that we would not know what we see. Some objects, shapes, colours would remind us of something. We would create visual hypotheses. We use them to orient in everyday life except for the fact that we are used to identified objects, they are familiar to us and relatively unchangeable. According to A. Démuth, the process of perception of colours is similar: it seems that if an individual percept of colours is decided (except for other aspects) mainly via means of its processing by individual receptors and mechanisms of brain or retina (a colour is not necessarily completely determined only by a wavelength of falling light) and even a percept of colour

can be influenced also by expectation itself or its previous perception… it is then appropriate to raise a question whether a colour is real or only our subjective optic illusion. (Démuth, 2005) Comprehension of the seen takes place on the basis of structuring of the field of percept and through perception effects.

Aesthetic perception (especially when modern works are considered) assumes high creative activity of a percipient which is characteristic of prompt formation of a visual hypothesis, their quick verification and active restructuration of a visual model. What are the sources of visual hypotheses? It is quite simple with "ordinary vision" — we form visual hypotheses on the basis of various symptoms we saw and according to our expectations. Thus, we can say that we see what we expect to see. However, is it also valid for unclear situations (so e.g. during aesthetic perception of a modern work of art)? We assume that it is valid especially for them. A visual hypothesis subsequently intervenes into structuring of the field of percept again and restructuring takes place. Symptoms of visual objects usually correspond to our expectations.

Perception and vision almost always take place in a certain context. If the context is not given and expectations are not created, a sense, meaning of the seen is formed as in the case of reversible figures. However, if we are in a familiar environment, our vision is automatic and chooses only those items from our surroundings which it necessarily requires.

If we appeared in a completely unknown environment we would then realize how complicated a mental process of vision is. We would probably lose the ability of visual orientation. And it is this phenomenon we encounter when perceiving a fine art artefact. (Kulka, 2008)

However, let us have a look at what is going on during perception of a work of art, for instance, during a look at a picture. In The Mystery of Consciousness, Daniel Dennett describes his personal experience: when I was looking at Bellotto's view of Dresden on a remote wall of The North Carolina Museum of Art in Raleigh,

I considered it to be a picture of Canalleto and I was approaching it eagerly in expectation that I would feast my eyes closely on beautiful details on Venetian boats and gondolas, spars, buckles, shoes or feathers on hats that Canalleto did not spare. A mixed mob of people moving on Dresden bridge in sunny light promised enough costumes and wagons, yet when I approached it, the details about which I could have sworn that I saw vanished before my eyes. There were skilfully arranged colourful spots in the picture visible from a close distance. (Dennett, 2008)

These flecks reminded Dennett of people with hands, legs and costumes and his brain (equally as a brain of any of us) accepted it. What does it mean? What did his brain do? Dennett offers the answer that the brain did not perform any visual interpretation. Bellotto provided a little bit of colour to a percipient in order to make him see and it seems that he counted with our suggestibility, the fact that our brain would cheat. (Dennett, 2008)

There is one anecdote about the French impressionist Monet who came to London and painted a picture of the well–known London fog which increased a level of emotions and outraged its citizens, because the fog was painted in pink. "But our fog is grey" opposed the Londoners. When they took a closer look, they realised and for the first time saw that the fog had a shade of lilac. The art uncovered a colour where people saw only greyness.

In Hyughe's opinion, we can decipher, comprehend or simply see a work of art and its content given to it by an artist only when we are able to approach it as a complicated whole which represents every picture: to a shallow percipient it might seem that it is sufficient to recognise a similarity with known reality and he entertains himself by comparison of one with the other. However, the viewer is soon instructed by intuition that every picture embodies a symbol and that except for similarity and beauty also a trace of a soul can be found in it equally as in every human face. It is the soul that links all mentioned elements into a work of fine art by an invisible tie. What Huyghe termed "a soul" is basically the goal of our

research. The goal of aesthetic perception is formation and structuring of an aesthetic object in a percipient's consciousness what, according to a psychologist Kulka, brings him beyond boundaries of ordinary sense reflection of reality. The object appears gradually and its final appearance is not identical with a given work of art although it arises from it. At this point it is necessary to thoroughly distinguish aesthetic perception from the ordinary one. Not only a sense image (perception) but also cognitive processing (cognition), experience (emotions) and assessment are considered to be required and constitutive elements of aesthetic perception.

Except for experiences and assessment representing an integrated part of aesthetic perception, it is necessary to take into consideration a set of mental processes (experiences, stances, assessments, etc.) taking place after a phase of immediate perception of a work of art. We can simply call them aesthetic responses. (Kulka, 2008)

It is evident that the whole situation is more complicated thanks to the fact that crystallisation of aesthetic object is not usually terminated within aesthetic perception but it is completed in the aesthetic response. Ernst Cassirer drew attention of the philosophical community to the fact that comprehension of a work of art assumes a possibility of recurrence, repetition of at least basic parts of a creative process in which it originated. At this point we get to another aesthetic assumption of aesthetic perception: during perception of an artistic artefact, a percipient has to be tuned to a suitable channel thanks to which essential conditions of decoding of works of art are formed. At first, a short digression to the communication channel. (Kulka, 2008) Communication tuning is characterised by
— realisation of communication connections of a situation (I am looking at the picture which was painted by someone as a special type of communication, means of self–expression of an author)
— realisation of style or movement signs, period connections or basic significance of a work

— if it is possible, realisation of the author's "work" creative method (cognition of a process how a work was created deepens its comprehension, nonetheless does not represent a condition). (Kulka, 2008)

After the short explication of communication tuning, let us go back to the explanation of a meaning of the term decoding. It is a phase of aesthetic perception of a work of art representing a transition from perceived images to their meaning and sense. Decoding is a presumption of comprehension of a work of art. When we perceive an artistic artefact, at first we become aware of its sense appearance — we see colours, shapes and motions, hear sounds. From this zero layer of aesthetic perception we move to the first layer — realisation of meanings of several particular signs (e.g. trees and grass on a landscape painting). Decoding commences already on the zero meaning layer, however its real domain is just the first meaning level of a work. Decoding is not terminated by recognition of simple meanings, it moves further — to a higher meaning layer where semantemes originate. In a similar way, interpretation originates already on the lowest meaning layers. This interpretation phase provides meaning to what an artistic artefact declares (a product of decoding).

Of course, in everyday life we interpret phenomena absolutely everywhere, for instance: It is raining. Interpretation: my garden will be watered or I do not have an umbrella, I will become wet, and so on. Interpretation differs from decoding by the fact that it affects all types of artistic signs but also gets beyond them, into a depth. Interpretation is virtually the last step to relative completion of an ideal artistic model — completes aesthetic experience from a work. It arises not only from what we hear and see but also from a whole diapason of experiences and a set of images which an artistic object arouses in us. During perception of a work a so–called association mechanism enriching content of aesthetic object is launched. An association ability of psyche resides in the fact that it can connect its contents variously, i.e. it can associate into

miscellaneous set chains in such a way that by stimulation of one, others are raised. Thus, judgements and images, emotions and percept, emotions and judgements, etc. can be interconnected.

According to Kulka, visual perception, as an example, is able to arouse not only visual but also tactile, olfactory, auditory and other images which we term synesthesias (e.g. a film shot of wood arises smell of wood in a viewer).

Perception of an artistic object, its decoding and subsequent interpretation are conditioned by percipient' s experience and knowledge, his personality, overall content of his mental life and cognitive habits. The fact that various experiences and aesthetic images are influenced by percipient' s individuality can be termed a set of psychological processes which lead to unique interpretation of a work, or by a single word apperception.

Thanks to apperception, every aesthetic perception has its own colouring, its own "taste".

When we see a wood in a picture it means something else for each of us. We experience it variously, and we connect different associations and etc. with it. There is no perception without apperception.

Crystallisation of an artistic object is participated by perception, imagination, thinking and feeling. These mental functions are managed in order to provide a sense reflection of a work of art, its cognitive processing of aesthetic experience, and primary, spontaneous evaluation of a work. All these then lead to decoding and finally to interpretation. It follows that a role of knowledge, cognition and experience is absolutely irreplaceable during perception of a work of art or aesthetic perception.

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4. Taste. Types of Aesthetic Perception

Key words: *taste, percipient, Dionysian tendency, Appolonian tendency*

In the previous chapter we focused on aesthetic perception in general and now we are to determine a percipient i.e. phenomenon, which is closely connected with it — *taste* and *types of aesthetic perception*, in more details.

4.1 Taste

The philosopher H.G. Gadamer in his *Truth and Method* introduces a hermeneutic analysis of the concept of *taste*. According to him, this concept expresses a certain means of cognition. (Gadamer, 2010) He characterises "refined taste" as *sensitivity*, does not rely on certain knowledge substantiated in advance, and rather proceeds from intuitive certainty. The phenomenon of fashion is closely connected with taste. *"Therefore, the concept of taste means that also in fashion we show moderation and do not blindly obey varying requirements of fashion. We follow our own opinion and firmly stick to our "style", i.e. we put the requirements of fashion into a relation to a certain whole taking into consideration its own taste and accepting only what suits this whole and the way it matches it accordingly."* (Gadamer, 2010, 49) Through taste we perceive either thing as beautiful and moreover, we have to take into account a certain whole into which everything has to perfectly fit. (Gadamer, 2010)

Taste assesses the particular in respect to a whole and therefore such evaluation has to have a certain "sixth sense". As Gadamer assumes, it cannot be proved. (Gadamer, 2010)

4.2 Types of Aesthetic Perception

We differ in aesthetic perception and assessment, and that is what inspired aestheticians, art psychologists and artists to determine various types of aesthetic cognition.

Although several typologies originated from plenty of experiments, we are to introduce at least the most interesting ones. The authors of these typologies attempted to find out individual typical prevalence of certain mental functions during perception, or in the second approach, they tried to create a typology of perception based on external, subject aspects of aesthetic artefacts. A particular type of the given typologies determines a process or a function being present in the foreground during aesthetic perception of a particular individual.

At the beginning of the 20th century, the French psychologist Alfred Binet and his British counterpart Edward Bullough introduced a well–known typology of aesthetic perception.

Binet proceeded from the aesthetic object. He distinguishes four types of aesthetic perception:
— Descriptive type — this type focuses on description of details, does not try to define their sense and relations.
— Observation type — this type of percipient catches only significant features of an aesthetic object and evaluates them.
— Erudite type — a percipient of this type does not try to describe or analyse an object, but rather introduces everything what he knows about it.
— Emotional (imaginative) type — this type attempts to capture emotional meaning of an aesthetic object. Binet' s typology was later elaborated — for instance F. Műller presented six types: descriptive, observant, emotionally descriptive, emotionally

observant, eruditely descriptive and eruditely observant. (Kulka, 2008)

Bullough focused his research on aesthetic evaluation of colours. He distinguishes four types of aesthetic perception:
— Objective type — intellectual evaluation is typical of this type, feeling influences an evaluator to a lower extent than his intellect.
— Intrasubjective type — this type reacts to aesthetic objects mainly emotionally. In this case, perception is subjective and connected with physiological functions.
— Associative type — various associations emerging during perception are typical of this type of percipient.
— Character type — this type perceives aesthetic objects as if they represented character features of his personality.

Through study of purblind and blind children an American philosopher Viktor Löwenfeld came to two different types:
— Visual type — this type prefers visual experience, builds on information from the external, visible world.
— Haptic type — this type of a percipient (or a creator) relies on his personal experience and real environment which surrounds him. For instance, a haptic artist proceeds much more from his internal world than surroundings.

To put it simply, the visual type is anchored in external reality, while the haptic one perceives aesthetic objects through his own body and internal world.

The most elaborated typology comes from the German art psychologist of the 1920s and 1930s, Richard Műller–Freienfels. He arrived at five types of aesthetic perception applicable also to the field of creation:
— Sensory type — this type concentrates especially on sense qualities of works of art, colours, shapes and structures are perceived by him very sensitively. He does not enrich them much with associations.
— Motor type — it is a type who reacts to aesthetic objects by motion. It does not apply only to music but to all types of art. It is

not always real motion; frequently only images of motion are present.

— Imaginative type — for this type of percipient or creator an artistic object represents an outcome of rich fantasy activities.
— Intellectual type — this type of percipient or creator puts intellectual processing of experience in the foreground.
— Emotional type — it is a type who lets himself be enchanted by his emotional experiences.

Műller–Freienfels introduced also two types of percipients arising from the opposite of empathy (die Einfűhlung) and contemplation (die Kontemplation). He applied Nietzsche' s terms "Dionysian" and "Appolonian" approach to two different typological tendencies: Dionysian tendency prefers emotional relaxedness, spontaneity or even ecstaticness, while Appolonian tendency is moderate, contemplative, almost ascetic. (Műller– Freienfels, 1936) Moreover, in the system typology, we distinguish between active and passive percipients, i.e. between "team mates" and "viewers". An active team mate not only fully experiences aesthetic object but also empathises with it, while a passive viewer let himself be carried away only by free associations which an object arouses in him. According to Kulka, these two tendencies can be even combined and thus we can also speak about a passive team mate and an active viewer. (Kulka, 2008).

4.3 Spontaneity of Perception of a Work of Art

The typologies of aesthetic perception and creation represent an excellent tool when categorising a wide spectrum of percipients and creators. At the same time, they help with more profound comprehension of "consumption" of aesthetic objects and art. Yet, the question is, how much effort a consumer have to make in order to comprehend a work of art. Plenty of consumers believe that they should comprehend a work immediately, without any effort. According to majority of art theoreticians and aestheticians, this fact can be considered a serious manifestation of disrespect towards a work of an artist. Basically, there are two contradictory opinions regarding perception of art. According to one of them, a percipient should be in an identical mood with an artist — only then we comprehend his message also without preparation and various comments. Supporters of the other attitude assert that a work of art has to undergo analyses based on knowledge of particular artistic aesthetics.

What is problematised here is virtually an issue of spontaneity of perception of a work of art. The first opinion believes in spontaneity, whereby art is predominantly a matter of feeling, while the other attitude assumes certain aesthetic distance and rationality. In Kulka' s view, also a third opinion is acceptable, i.e. the so–called *prepared spontaneity*. When perceiving a work, certain knowledge is necessary and does not interrupt spontaneity of a course of communication. (Kulka, 2008) When knowledge is sufficiently automated, it can work at the background, in a basis of spontaneous perceptional act. What aesthetic — psychological principles of preparation for perception of a work of art and subsequent artistic experience could we render? The so–called permanent dispositions of artistic experience include knowledge (e.g. historical knowledge of modifications of individual types of art), opinions on art, a position of art in an individual' s value hierarchy, aesthetic experience, his life and cultural style, etc. If one considers art to be something pointless, seldom can it arouse intensive experience in him; if he sees art only as a source of fun, it negatively influences his choice of artistic production (and subsequent perception and interpretation of a work of art).

Except for the permanent dispositions it is necessary to form also the so–called *current dispositions* directly connected with listening to music, visit of exhibition, cinema, etc. It includes list preparation of reception environment, social atmosphere, establishment of trust in an artist, tuning to a suitable communication channel, etc. *Upgrade of aesthetic orientation* within which release of practical corrections of everyday experience and subsequently

of fantasy take place can be considered the most important part of preparation of artistic experience. Further, individual' s focus on internal experience of himself gets accentuated. (Kulka, 2008)

If aesthetic experience should be complete, we cannot be passively carried away by a work of art. Experience should be a result of concentration, intellect and fantasy. As Kulka states, aesthetic experience originates only thanks to active contribution of a percipient. (Kulka, 2008)

Recommended Literature

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5. Creation of a Work of Art

Key words: *artistic creation, artistic aptitude, preparation, incubation, inspiration, verification*

Artistic creation represents a certain type of creativity. According to Blažeková' s typology, we can distinguish *existential* and *instrumental* creativity. (B. Blažek, J. Olmrová, 1985) Existential creativity has the following characteristics: it interferes into all spheres of human existence, cannot be taught, remains non–professional in its expression and focuses on a sense of life. On the other hand, instrumental creativity concerns rather specific features of a human being, can be taught and leads to professionalization and improvement of performance. Some philosophers put creativity into a centre of world affairs (for example: Bergson, Whitehead and others). From own experience and self–observation an artist knows that he can provide only incomplete information about a creative process. Even objective observation does not bring much information as, for instance, depicted in a documentary Le Mystére Picasso of 1955, in which a viewer can see a birth of a creative intention and a process of work of a painter. A camera shoots all Picasso' s motions in details which are from time to time accompanied by director' s questions and Picasso' s replies. However, we observe only a way how the artist sketches particular compositions, throws away sketches, draws new ones and permanently redraws something and so on. The documentary shows improvisatory spontaneity and Picasso' s virtuosity, yet neither the working author himself, nor a viewer

knows what will arise from the creative activity. Picasso himself commented on this issue: "when one is working, he does not know what will be the result. It is not indecisiveness. A change takes place no sooner than during work".

A substance of artistic creation remains veiled in mystery also due to the fact that plenty of its moments are irrational, intuitive and random. As several artists (Kafka, Kundera, Wagner, Eco, Goethe and others) assume, a coincidence cooperates with a creator only if he is prepared. Artistic depiction of the world passes through several stages which we could express as *a pretext* — the first artistic impressions and images present in artist' s mind, *an architext* — represents more specific notes, drafts, sketches, etc, *a prototext* — drafts, models, score, *a text* — is a final arrangement of artistic signs, *a metatext* — follows after publication of a text — reviews, critiques or own comments, reflections and so on.

5.1 Types of Aesthetic Creation

The Russian aesthetician J. G. Gurenko classified artistic creation into 4 types. A degree of completion of an artefact and extent of independence of artist' s creative activity represented the criteria. Gurenko distinguishes completely independent creation, relatively independent creation and completely dependent creation which he does not considers to be artistic.

According to Gurenko' s division, Kulka introduced a more detailed categorisation:

Alfa — creation (primary type, of independent creation) — painting, sculpturing

Beta — creation (primary type, of relatively independent creation) — music composing, belles–lettres writing

Gama — creation (secondary type, of relatively independent creation) — dramaturgy, directing, conducting, choreography

Delta — creation (secondary type, of relatively dependent creation) — art of acting, dancing and film shooting.

This classification is not axiological — (primary does not mean better) only expresses a way of participation of a creator on creation of an artefact. The classification is significant when clarifying psychology of creation, because it makes a difference, if a creator creates independently of the beginning or if he proceeds from a project. Creation of a work of art can be comprehended as a solution of a specific problem. A problematic situation is generally solved, if we find a solution, i.e. a means how to change A state to B state, provided the A state represents an initial situation of artistic creation during which an artist acquires his creative intention. Subsequently, he fulfils this intention through a whole array of artistic experience and skills. If we borrow a terminology from evolutionarists, we can say that creation of an artistic artefact takes place on the basis of

— Random Selections (a creator generates various ideas and tries possibilities) and
— Selective Retention of those variations which develop creator' s intention.

Thus, an artist plays with his ideas. His work is instinctive in many aspects. He frequently does not know what he is doing and even he sometimes does not know what his picture means. Picasso described his creative activity as a game and he would probably protest against the fact that he is solving a problem. From a cognitive perspective, it is a creative solution of a problem through a creator' s variation and subsequent choice of the most suitable one.

5.2 Stages of Artistic Creation

At the end of the 1920s the American psychologist G. Wallas introduced the following stages of artistic creation:

Preparation (education), incubation (maturing) illumination (a solution procedure) and verification (check). As Kulka asserts, stages of creation which are divided a bit more minutely are accepted today:

1. Preparation (education) — this stage is not necessary, although it is an exceptionally frequent phase of implementation of a work of art. However, preparation can be also omitted (in a certain sense, author's earlier life and artistic experience always represent preparation).

Nonetheless, in creation the preparation phase is present more often than not– follows a birth of artistic intention, modifies and concretises it gradually, more and more . The artists who shared description of their preparation activities are, for instance, Picasso with his Guernica, T. Mann with his the text The Genesis of Doctor Faustus or F. Liszt who said: My spirit and my fingers are working like the damned; Homer, the Bible, Plato, Locke, Byron, Hugo, Lamartine, Beethoven, Bach, Hummel, Mozart, Weber and the others are all around me all the time. I study them, meditate them, devour them furiously, besides this I practise four to five hours a day (theories, sixths, octaves, tremolos, cadences, and so on). (Kulka, 2008)

2. Incubation (maturing) — creator's intention is a subject to his permanent imaginative activity, it takes place during sleeping and being awake and is processed knowingly and unknowingly. Artistic drafting during which selection of information required for creation of a work occurs is initiated by the incubation stage. The ground for the following stage of illumination is being prepared in this phase and since creation is a problem which an artist needs to solve creatively, a birth of artefact is also accompanied by certain tension, doubts, sometimes even anxiety. These feelings evoke new images in creator's mind and sometimes increasing tension leads to a state of feverish creation and self–forgetting.

3. Inspiration (stimulus) — it is a special case of focus including functioning of various creator's apperceptions such as, for instance, proposition of new ideas, sensitive perception of problems, creative combinatorics and variations of individual images. In this phase, new ideas are discovered most easily although it represents an exceptionally fragile stage. Inspiration is not the only condition of artistic creation. In spite of the fact that it follows preparation and incubation its significance is paramount. In this phase, the most original ideas originate. P. Valéry aptly said that the first verse is given to an author, while others have to be written by him. A way from inspiration to the following stage — illumination is usually short, therefore, it is exceptionally vital for artist to capture it.

4. Illumination (enlightenment) — Inspiration provides new ideas and images to an artist, although not all of them are suitable and applicable. When selecting those suitable ones, artistic intuition helps. Although this type of intuitive insight is frequently comprehended as almost mystical, mental regulation of intuitive processes is equally realistically conditioned as any other activity. Individual mental acts can be formed for instance in a way enabling application of all of them at once instead of according to their order. Or other processes take places subconsciously. An intuitive view then looks like a sudden idea which emerged unexpectedly. No matter how mystical the idea might appear, it has to be prepared.

5. Elaboration (implementation) — this stage is disproportionally longer than the inspiration and illumination ones. It might concern parts of a work or its whole — in every following idea artist's stimulus to work is hidden.

6. Evaluation (assessment) — directly follows each processing of stimuli. An author basically constantly checks whether expression of his work fulfils the original communication intention. At the same time, restriction of freedom of creator's decision making occurs since possibilities of choice of suitable alternatives are more limited and sometimes a work starts to dictate its future development to its own author. From time to time, the evaluation stage leads to interventions into already finished work of art.

7. Correction (revision) — this stage includes final modifications of an artefact, additional changes, and additions, etc. (Kulka, 2008)

5.3 Creator's Personality

Artistic creativity is a matter of a whole personality. It is not shaped only by a few exceptional abilities. If the artist's personality should bring new aesthetic values, it has to be manifold, sensitive and original. The most frequently mentioned properties connected with artistic creativity are as follows: sensitivity (perceptiveness, problem sensitivity), fluency (ability of quick and heterogeneous production, finding of various alternatives of a solution), flexibility (elasticity of thinking), originality (ability to produce new ideas), redefinition (ability to repeatedly determine and remake), elaboration (ability to develop thoughts), analytical character (ability of being good at analysing and using existing experience, dividing a whole into parts), synthetic character (ability to apply old elements and experience in new means of creation) and improvisation (ability to produce without preparation, according to a current mood). The introduced creative abilities are quite complex. Except for the above, also the following creator's characteristics showed in researches as decisive: self–madness and self–reliance, independence, self–control, self–development, assertiveness, contemplativeness, variability, immediacy, spontaneity, creativity, dreaminess, fantasy, openness, and mental wealth (i.e. rich inner life, processed painful experience, etc.).

We can see that an artistically creative individual lives rich inner life, works on himself, is open to world and change, while at the same time remains himself, suffers from uncertainty, fear and pain. (Kulka, 2008)

5.4 Artistic Aptitude

What represents a substance of artistic aptitude? On a basis of his researches, V. Dočkal asserts that domination of a creative part of intellect over reproduction one (so–called divergent type of intelligence) is typical of artistic talents. For art a search for various answers is indeed more important than their discovery. Children who represented the subject to Dočkaľ s research showed above–average performance also in classical intelligent tests, while adult artists often achieved only average in them, their abilities have specialised in spheres which are not recorded by the tests. A significant sign of artistic aptitude are broad–spectrum artistic interests. A gifted man does not focus only on his type of art (Rabíndranáth Thákur — a Nobel Prize winner in literature was also an excellent musician, M. Dietrich was an outstanding violinist in her childhood, L. Ullmann engaged in theatre directing and drawing, etc.). (Dočkal, 194)

Musical aptitude — the American psychologist C. E. Seashore defined a musical talent as a set of specific musical abilities: melodic and harmonic hearing, a sense of rhythm and musical memory. An interest in musical sounds occurs in a development of a child already during the first or second year of life, musical abilities in pre–school age.

Fine art aptitude — children with a fine art talent have an exceptional visual memory, are able to draw recognisable shapes one year ahead of children of their age (approximately after reaching the age of 2). Intelligence of children with fine art aptitude is above–average, they perform best in tests and examinations of nonverbal creative abilities.

Literary and dramatic aptitude — above–average intelligence in the field of verbal creativity is typical of this type of aptitude. Owing to the fact that it is an interpretational talent, except for verbal abilities it also requires empathy, further, movement memory, movement creativity, coordination of a motor activity, verbal memory, phonetic abilities and verbal creativity.

Recommended Literature

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6. Perception of Beauty of a Human Face

Key words: *face, directional asymmetry, fluctuating asymmetry, face averaging*

Perception of a human face represents a crucial aspect for orientation in a society and estimation of properties of unknown persons. Can we imagine how hard it would be to communicate with a man who lost most of his face? In the countries of the Far East, a loss of face (meaning losing of dignity) is viewed as the greatest harm worse than death. For instance in ancient period, an expression for a theatre mask has become a term for a person — *prosopon* (Lat. persona), while Russian uses a term *lico* in order to denote a person. Also a Romany expression *gádžo* which can be translated as "without a face" is remarkable. (Komárek, 2008)

6.1 Male and Female Characteristics

Male and female faces differ in their shapes. Shape differences begin to deepen during the period of puberty. They are caused mainly by the influence of sex hormones — testosterone in men and oestrogen in women. A male face differs from the female one mainly in greater development of a lower jaw, bigger protruding cheekbones and a deeper–set face. (Enlow — Hans, 1996) A female face reminds of a face of a child by its structure. A male body is on average bigger, therefore men have also bigger lungs and a respiratory tract, it follows that they also have a bigger nose than women.

A male nose protrudes a little bit more and its shape ranges from a straight to convex profile. Women have either a straight or concave nose profile. Men have generally rather a straight (so–called Roman) nose contrarily to women who mostly have a small nose with a tip turned upward.

Intersexual differences of a face shape are also visible when examining a forehead. A male forehead usually protrudes forward especially in an area just above the nose and eyes representing a more dominant supraorbital ridge and moves obliquely backward unlike a female forehead which is more perpendicular or rounded. Interesting differences can be found also in the eye area. Male eyes seems to be set deeper, more sunken, while female ones are not so hollow or set deep and therefore they are more conspicuous.

Intersexual differences in the mouth area reside in total size of lips. Women have bigger and more protruding lips than men. (Pivoňková, 2008) A sex can be determined with high probability already from a face of a new–born child — male newborns have wider head and generally wider face, smaller eyes and lower set eyebrows.

In order to increase their attractiveness and womanliness, women accentuate all mentioned feminine characteristics using decorative cosmetics (eye shadows, cheek make–up, a lipstick …). Intensifying of a red lip colour gives rise to an idea of emotional states connected with excitement what increases woman' s appeal in no small measure.

6.2 Briefly on Specific Brain Functions During Face Perception

"The face specificity hypothesis" is discussed in connection with cognitive processes of face perception. This hypothesis is related to existence of a neural network between the temporal and occipital lobe — in *gyrus fusiformis* — *"fusiform face area"* — FFA. (Kanwisher — Yovel, 2006)

Existence of this area is proven mainly by the fact that we perceive faces as a specific category of observed objects. As soon as we

identify an object as a face, cerebral cortex areas specifically focused on a face analysis get stimulated. (Gautier — Behrmann, 1999)

An interesting thing is that this action takes place also during perception of an extraordinary stimulus situation — for instance, when a face is turned by 180°. During identification of an inversely turned face a time delay occurs (120ms) what is interpreted as a two–stage face recognition. When a face is assessed as attractive, the medial orbitofrontal cortex gets stimulated. Facial attractiveness increases activity of the cortex. It is remarkable that this activity and attractiveness of a given face increase at the same time when one is smiling. (Blažek, 2008)

Evaluation whether we like, repulse, found something interesting or not represents one of initial aspects when perceiving a face.

In the following lines we are to deal with knowledge on characteristics of attractive faces from a perspective of current cognitive psychology and ethology. Especially evolutionary oriented concepts are to be discussed.

Perception of attractiveness usually modifies on a basis of context of meeting with a given face. Whether we realize it or not, appeal significantly influences plenty of our social decisions and activities — treatment of offspring, choice of a partner, lawsuits, choice of employees, and so on. Individuals who gave the impression of being attractive are usually considered to be more desirable partners, have more sexual partners and begin earlier with their sexual life. (Rhodes– Simmons, 2005) As we have already mentioned, the face is not the only part of a human body which influences our perception of individuals as attractive or unattractive — we evaluate height, size of breasts as well as waist to hip ratio or waist to shoulder ratio on men. These other characteristics represent a subject of chapter 6. Until recently a community of psychologists, aestheticians, artists and anthropologists believed that attractiveness of face depends on taste and thus that perception of beauty differs depending on cultural and social aspects of society. (Havlíček — Rubešová, 2008)

6.3 Averageness

Certain type of averageness (we do not use a term mediocrity since we do not discuss the most common face features) has shown to be one of the aspects of attractive faces. By averageness we want to denote a fact that a face as a whole approaches to hypothetical average of population. Sir Francis Galton was among the first scientists who noticed this phenomenon in the mid–19th century. He was taking composite photographs of criminals in order to find a typical appearance of a criminal. He took photographs via repeated exposures of negatives of individual faces one over the other and found out that a final face is much more attractive than faces of individual criminals from which it was created. Later in the 20th century this phenomenon reappeared in researches. Evolutionary oriented psychologists (Fink, B., Voak, I.) assume that attractiveness of average faces is a consequence of stabilising selection and points out to higher extent of heterozygousness of an individual. (Fink — Penton — Voak, 2002)

6.4 Symmetry

The second very important characteristic of facial attractiveness is symmetry. A human body is bilaterally symmetrical and thus we can distinguish between directional and fluctuating face asymmetry. (Havlíček, Rubešová, 2008)

Directional asymmetry represents systematic differences between right and left side caused by activity of a particular individual; unlike fluctuating asymmetry which results from random dissimilarities existing between both sides which probably originated as a consequence of imperfect gene expression during ontogenetic development or by effect of pathogens or combination of both aspects. Researches show that the lower fluctuation asymmetry is the more attractive a face becomes in evaluation. Even the evaluation of monozygotic twins showed that the more symmetrical

one is considered to be the more attractive. An interesting thing is that extent of symmetry is not static — it modifies, for instance, in connection with the menstrual cycle. During the ovulation period female faces (but for instance also breasts) are more symmetrical. (Scutt — Manning, 1996, 2477–2480) Modifications of male symmetry in connection with a level of certain hormones have been discovered, as well.

How should we explain a tendency to consider symmetrical faces to be more attractive? There are at least two theories. According to the first one, it is a secondary product of functioning of our visual system which processes symmetrical objects more easily than asymmetrical ones. This would mean a general preference of symmetrical shapes. However, this hypothesis can be easily contradicted by the fact that we process faces in specific parts of brain (as we have mention above). The second theory comes again from evolutionary psychologists — a tendency to prefer symmetrical faces represents adaptation for selection of a genetic quality partner. Low extent of fluctuating face asymmetry means certain developmental stability though. Extent of symmetry reflects quality of gene expression during development of organism and also its ability to cope with pathogens, toxic substances and other environmental dangers.

6.5 Other Aspects of Facial Attractiveness

Except for face features facial attractiveness is influenced also, for instance, by skin through which we can determine the age of an individual, state of health or sex, as well. As we get older our skin acquires wrinkles, is less stretched and covered with more pigmented lesions. Skin reflects plenty of health problems — acne, eczemas, skin infections, jaundice, etc. These aspects influence assessment of facial attractiveness to a large extent. For instance, Fink and Thornhill' s researches showed that homogeneity of female skin texture correlates with facial attractiveness. Another

characteristic affecting the appeal of a human being is hair. The amount of time and resources we dedicate to hair care could be one of the indicators of significance of hair. (Havlíček, Rubešová, 2008)

Face expressivity represents also important criterion of its attractiveness. For instance, as Mason, Tatkow and Macrae found out, people looking towards us are perceived to be more attractive. Individuals with dilated pupils are equally perceived to be more attractive, which is frequently used in marketing. Individuals promoting products on billboards have digitally dilated pupils. (Havlíček, Rubešová) Also smile has exceptionally positive influence on attractiveness. A study of Jones et al. has shown that directly seen smiling faces were perceived to be more attractive, while faces with a neutral expression were considered more appealing from a side view.

6.6 Attractiveness During the Menstrual Cycle

Majority of studies agreed on the fact that female facial attractiveness changes during the cycle. Men and likewise women determined photographs of women taken in the follicular phase as more attractive. Studies also confirmed a positive relation among attractiveness, femininity and levels of oestrogen in women who did not wear make–up. However, the studies did not unequivocally show which face characteristics get modified during the period. It might be a change of intensity of red lip colour in connection with increase of a basal temperature during ovulation, modification of colour and quality of skin, dilatation of pupils and so on. Let us continue in discussing of an exceptionally interesting phenomenon — the female menstrual cycle for another while.

Several studies implemented during last decades imply that during the cycle also modification of attractiveness preferences takes place. During periods preceding and following ovulation increased preference of masculine features was discovered. Simmons and Roney' s experiment measuring levels of testosterone present

in men showed that women with a high level of estadiol, i.e. those who are in the period before and after ovulation incline to faces of men with high levels of testosterone. These results are most frequently interpreted as adaptation to preference of individuals with properties implying strong genetic makeup.

Owing to ancient Platonic identification of beauty and good we usually assign more positive properties to more attractive people. So, in a certain sense, more appealing people were born under a lucky star. They suffer less from loneliness, social anxiety and embarrassments in public. We like helping them and establishing relations with them, even it showed that it is more difficult to lie to a more attractive individual than to less appealing one. The fact that attractive individuals are preferred as sexual partners has been already mentioned for several times. Moreover, beautiful people have more positive self–image as to their abilities and mental health. Attractiveness is put into a relation with intelligence — attractive individuals are perceived as more intelligent (yet, studies diverge in this). It is highly probable that beautiful faces attract us just due to all these positive characteristics which we connect with them.

"A profitable business has developed from the cult of beauty, whole branches of industry and services live on it, however, what is worse, it has become a tool for manipulation of woman through assessment and classification. Beauty myth lies to all that there is something like the ideal of beauty and therefore it is necessary that women attempted to achieve it and men adore it." (Wolf, 2000) Naomi Wolf in her bestseller *The Beauty Myth* asserts that also youth is a part of the current "beauty myth": *"It is evident, how plenty of employers follow this standard. Some of them want to employ only young women, others have requirements connected with visage and behaviour. Generally, it represents a strain affecting woman's behaviour because an attack via the beauty norm forces her to "work on herself". This term already sounds even positively because the beauty myth includes also health. Women themselves put their*

heads in a nose of cosmetic procedures, slimming and plastic surgeries. They are willing to starve, thus no wonder that a number of anorexias and bulimias has increased markedly. Rituals serving the beauty myth replace also religious rituals because if a woman wants to eat correctly, do exercise correctly, run, use the right cosmetics and clothes, she cannot save too much time for something else and if she finds it, she is tired, exhausted and emotionally overloaded." (Wolf, 2000)

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7. Perception of Beauty of a Body

Key words: *body attractiveness, waist–to–hip ratio*

Significance of attractiveness for interpersonal contacts has already shown in the previous chapter (persons with attractive shapes are assessed less strictly, they can find partners more easily, a whole array of positive properties is assigned to them, etc.). How is body attractiveness perceived? Evidently, it will not be premature to predict that physical attractiveness represents a similarly important factor as a beautiful face when assessing others, establishing of contacts and searching and keeping of a partner. What are mechanisms of perception and evaluation of physical attractiveness? Sexual dimorphism plays a substantial role when evaluating body attractiveness as well as facial appeal. At first we are to focus on features women find attractive.

7.1 What do Women Like?

Moustache and body shape are the most distinctive sexual characteristics of a human being. According to plenty of Barber's studies, women view men with moustache as more attractive (women assign a lot of positive properties to them), for them they look older, more masculine, braver, more mature and more reliable. (Barber, 1995) Further, according to researches, women prefer proportionally developed chests to extremely muscular figures. (Barber, 1995) Barber (1995), Schumacher, (1982) Jackson, (1992) Shepherd

and Strathman, (1989) pointed out in their studies to significance of male height when evaluating attractiveness. When a basketball player Magic Johnson announced that he had had thousands lovers he unequivocally uncovered female preferences for partners who have athletic qualities. Physical properties — build and power indicate important information which women apply when choosing a partner. (Buss, 2009) It seems that significance of physical properties can be found throughout the whole animal kingdom. For instance, during courting of species of a *gladiator treefrog* (Hyla rosenbergi), a female frogs intentionally ram to a sitting male frog which they have chosen. They hit it strongly and if it falls out of a nest, a female frog starts to look somewhere else. Majority of female frogs copulates with those male frogs which can withstand their attack, since ramming helps them to evaluate success rate of protection of its offspring. (Buss, 2009)

Similarly, physical protection which men can offer to women represents one of the advantages also for women. So, man's height, power and fitness are signs a woman prefers. Tall men (i.e. above 180cm) are considered more attractive, their tall figure brings advantages at work where they usually get a higher positions, they meet with the opposite sex more often and are assessed as more desired partners. Pawlowski, Dunbar, Lipowitcz and others found out that men who have children are taller than those who do not have them (they included also education, age and place of residence as variables). Studies dealing with advertisements showed that 80% of women which mentioned height in an advertisement require man who is at least 180 cm tall. Advertisements placed by taller man received more replies than those placed by shorter ones. Evaluation of male height shows as crucial also in a political sphere. D. Buss asserts that only few American presidents were shorter than 180 cm. In 1988, G. Bush triumphed in a TV debate by standing very close to his shorter opponent M. Dukakis.

It is important to keep in mind that according to researches preference of tall, physically fit men is not culturally restricted.

For instance, the anthropologist Thomas Gregor who performed a research of Mehinaku tribe in Brazilian forests claimed that muscular men with a tall figure easily establish contacts with plenty of partners. They are "handsome" (awitsiri) for women, command respect, triumph in politics and sexual life — embody all masculine qualities. On the other hand, short men are scornfully called peritsu and seen as wimps and down–and–outs. (Gregor, 2001)

Despite the fact that assigning of attractiveness to taller men has been proved, there is still a question whether male physical characteristics are selected because they are signs of good genes. For instance, in Barber's view, a male figure undergoes sexual selection owing to female preference of tall, muscular men who are able to scare enemies. Yet, extremely tall and muscular men are not attractive to women what implies that male physical characteristics did not have to necessarily origin through sexual selection on the basis of good genes. (Barber, 1995) However, it seems, according to plenty of studies, that physical attractiveness of man is much less important to women than, for instance, social position, economic background, reliability and intelligence. (Buss, 2009) Contrarily, men see physical appearance of woman as exceptionally important since it bears much information about reproduction value of a chosen object.

7.2 What do Men Like?

For a man the primary criterion when evaluating physical beauty of a woman is her youth, since a female reproduction value constantly decreases after reaching of the age of 20. It is low in the age of 40 and in the age of 50 is getting closer to zero. Preference of youth is not restricted only to western cultures. For instance, the anthropologist Napoleon Chagnon asserts that for men from Amazonian Indian tribe Yanomanö women who are "moko dude" — i.e. represent a ripe fruit: are fertile, and are the most attractive. (Chagnon: Yanomanö, 1997) Men preferred younger partners than they are themselves in 37 researched cultures. (Buss, 2009)

Our forefathers had two signals at their disposal which showed woman's youth — physical appearance (full lips, soft skin, clear eyes, bright hair and muscle tonus) and behavioural manifestations (youthful motion, vital mimics and vivacity). We have mentioned already in the previous chapter that unhealthy skin shows as unattractive. Cleanliness and health can be considered as universally attractive, nonetheless standards of physical attractiveness varies culturally. A lady with a slim figure is somewhere viewed as appealing and somewhere else the plumper one is more attractive. Cultures differ in evaluation of paleness or swarthyness of a skin, genitals, breast and so on. As Buss (2009, 75) claims, in many cultures men prefer big breasts, yet the Azande in Sudan or Ganda men in Uganda incline rather to long, sagging breasts. Preference of slim or plumper figures differs culturally, as well. These preferences are connected especially with a social position about which a body structure attests, thus in cultures where food is precious (Australian Bushmen) a corpulent figure is considered appealing (means wealth, health); contrarily, in cultures with enough food the relation between corpulentness and a social position is seen vice–versa. Men's individual preference of a certain volume of fat on a female body probably did not develop. (Buss, 2009)

A study of Paul Rozin et al. researching female and male view of various types of figures showed interesting outcomes. In an experiment men and women observed 9 figures ranging from very skinny to obese one. Subsequently, women and men chose the one who corresponded to their ideal. Moreover, women should have determined also a figure who they believed corresponded to a male ideal. In both cases, women selected a figure slimmer than average while men chose appropriate proportions. Thus, women mostly mistakenly believe that men long for very slim women. (Buss, 2009)

Although male preferences of female physical proportions vary, the psychologist Devendra Singh discovered certain constant physical preference. It is a preference of a waist–to–hip ratio. During puberty, boys lose fat in the area of thighs while during puberty

of girls fat accumulates in their bodies. After puberty, a female ratio of hipline to waistline is markedly lower than the male one. Reproductively healthy women have a ratio ranging from 0.75 to 0.95. Several arguments prove that this ratio represents an indicator of female ability to reproduce. A lower ration points out to previous pubertal endocrinal activity, on the other hand, a higher one means a pregnancy problem. As Démuthová claims (Démuthová, 2007), it is vital for a woman as a potential mother to secure enough energy to her child and possibility to gain it from potential supplies increases her success. From this perspective, very thin female figures are less attractive to men than those which have fat supplies. Singh performed 12 studies in which men assessed attractiveness of female figures differing in the waist–to–hip ratio and overall volume of fat. An average figure was assessed by men as more attractive than too slim or obese ones. Female figures with a ratio of 0.7 were considered the most appealing. Singh analyzed also Playboy magazine models and winners of beauty contests in the USA for the last 30 years and pointed out to the fact that preference of the waist–to–hip ratio does not change although models got slimmer during decades, their waist–to–hip ratio remained identical — 0.7. Explanation of preference of this ratio could be also the fact that pregnancy significantly changes this state. A higher ratio "copies" pregnancy and that makes women look less attractive. On the other hand, a lower ratio signalises health, reproduction fitness and absence of ongoing pregnancy. (Buss, 2009)

Another factor influencing male assessment of female figure attractiveness is symmetry. As Démuthová asserts (Démuthová, 2007), from biological perspective a symmetrical body represents an indicator of its phenotypic and genetic quality. Researches confirming significance of this indicator were performed on various age groups (18 — 85 years), occupations (worker — physician) and ethnic groups (Euro — Afro — Americans). Assessment was performed via Body Mass Index (BMI) — a weight–to–height ratio. If BMI value ranges from 18.5 to 24.9, weight is average. As several studies imply,

the waist–to–hip ratio and BMI of standard women highly correlate. (Toyvée, 1999) Démuth states that according to evolutionary oriented epistemologists, there a priori are structures in our mind acquired empirically, through experience of species causing that we can perceive beauty or attractiveness. (Démuth, 2009)

Researches unequivocally confirm that owing to various signals physical appearance of woman transmits woman' s physical beauty is the most significant male preference when selecting a partner. Buss presents an American study covering all generations during a fifty–year period from 1939 to 1989. The study measured a value men and women assign to various properties of selected objects. In all cases, men contrarily to women assessed physical appearance to be more important. (Buss, 2009)

Media images which constantly bombard us enormously affect our assessment of beauty.

Kenrick et al. performed a research based on showing of photographs of very appealing women or women of average appearance to a group of men; subsequently, men were asked to evaluate their commitment to their existing partners. Men who saw photographs of very attractive women disturbingly evaluated their own partners as less appealing than men who saw photographs of the women of average appearance. In spite of the fact that we are endowed with identical evaluative mechanisms which developed in people during prehistoric times, today, these mechanisms are artificially stimulated by visually sated culture in magazines, on television, billboards, etc. As a consequence of watching such images of "perfection", men have been becoming less satisfied and less committed to their partners. Of course, women do not fall behind and do not stand idly by — cosmetic surgery experiences boom and huge profits, mental anorexia is very frequent phenomenon and women choose more sophisticated, expensive, nonetheless often self–destructive means to beautify themselves.

It unequivocally shows that physical attractiveness has irreplaceable advantages — appealing people are more popular — we

tend to consider them to be more intelligent, trustworthy, mentally healthy, sociable, suitable for partnership, cooperation and so on. As Démuthová (Démuthová, 2012) asserts, to a certain extent, it is a consequence of a so–called halo effect when we let ourselves be influenced by a single positive feature during evaluation of a whole person. Woman' s attractiveness is a prerequisite of her marriage (or finding a partner) and also of a social–economic status of her partner. We can legitimately assume that women compete for men with a high status which they will be able to invest into their children. Contrarily, when men with a high status choose their partners intersexual selection dominates. Therefore they chose partners with a high reproduction value (waist–to–hip ratio of 0.7, BMI, age, and overall health).

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8. Art and Cognition. Art and Neuroscience

Key words: *cognitivism, Goodman, cortisol, endorphins*

The idea that art is valuable as a source of knowledge was most strongly promoted by the American philosopher Nelson Goodman: "A central thesis of my book is that art has to be taken as seriously as science, i.e. as a means of discovering, formation and development of knowledge in a broader sense of development of cognition". (Goodman 1996, 114)

One of the objectives of cognitive aesthetics is a question whether and how we can learn from art. It is evident without any deeper analysis, right on the first level of thinking that we learn from art — we can gain various information from novels, pictures and sculptures. However, this random information does not represent the interest of our research, is not an integral but arbitrary part of a work. According to G. Graham, there is a more integral relation between art and cognition in works of art, teachings are presented in them intentionally. (Graham 2004)

Artists often attempt to bring messages. Therefore, we distinguish works of art which "only" present something and works mediating to us better comprehension of something. Of course, art bearing a message is frequently propaganda, i.e. advancing of certain ideology. The propaganda persuades by the most effective means which are at its disposal, while learning persuades through critical and contemplating comprehension. Art does not provide

us with factual information and should not represent appealing propaganda, yet it helps our cognition.

8.1 Cognitivism

Theories based on the assertion that art is valuable because we can learn through it we term "cognitivism". Certainly, there can be found plenty of opposing attitudes in aesthetics and theory of art according to which development of our cognition is the last thing which would be a part of art.

For instance, the American aesthetician Douglas N. Morgan believes that if we consider art to be a source of knowledge, we overestimate its value and forcibly impose a form on it that it does not have. He contributed to a discussion on cognitive significance of art by a comment stating that in spite of the fact that a lot of works of different types of art provide various pieces of knowledge, if this knowledge determined art, the world would be even more wretched than it is today. (Morgan, 1969)

Morgan opposes cognitivism in art by the fact that if we assign a cognitive task to art we do it because we mistakenly assume that we can choose only between art as entertainment or art as a compensation for empirical knowledge. There is at least one counter–argument to Morgan's assertion — Morgan assumed that cognitive importance of a theory has to be expressed by terms of propositional logic, i.e. either as singular or universal judgements. Morgan argued by means of logic in the following way:
— Every truth has to be deniable.
— One work of art cannot deny the other one.
— Therefore works of art cannot be a source of any kind of truth. (Morgan, 1969)

However, cognitivism in art is not based on propositional logic argumentation, according to theories of cognitivism, a work of art is not only beautiful and entertaining, but it also contributes to our comprehension of reality. Nonetheless, this theory has much more supporters than, for instance, expressivism. So how and in what ways does art develop our cognition? We have already mentioned that works of art do not represent explanations of theories or summary of facts; they are rather imaginative creations which can become a part of ordinary experience.

Decision–making about what we like and dislike, what is beautiful or not is in the centre of attention of theoretical effort of art psychologists, sociologists and aestheticians. Present–day visualisation methods through which neuronal correlates of aesthetic decision making can be found enable to get beyond boundaries of philosophical and aesthetic speculations. (Koukolík, 2006)

8.2 Music

Our perception of sounds or images is designed to enable us to catch contrasts on a still background. This fact was very important from the evolutionary point of view — since noticing of enemy's movement is probably the most vital for survival. If we place a small child or a monkey among loudspeakers and move a source of sound within a room by a stereo/mono switch, we can observe turning of head towards the source of music. This is only an illustration how perception works on a contrast principle. Let us discuss evolution a little bit longer — approximately a 50 thousand–year old bone "flute", from the period of Middle Palaeolithic was found in Neanderthal camp in Slovenia. It was probably made of a bear thighbone. It has four holes — a distance between the second and third hole is twice as long as a distance between the third and fourth hole which does not contradict formation of a whole tone or a semitone. It even implies that a scale of that era was identical with today's arrangement. We can assume that basic musical forms are somehow predetermined by a neurobiological substrate which determines their form.

For instance, also Chinese flutes dated between 7000 and 5700 BC have eight holes in identical arrangement as present–day fipple flutes. (Höschl, 116)

It is questionable what is evolutionary history of an initial state and processes of development of music abilities like. For instance, in Miller's view (2002) music developed as a tool of sexual selection. A meaning of such a tool is to signalize biological qualities and acquisition of a partner. On the other hand, Hagen and Bryant believe that music is a signal system serving for creation of coalitions and thus it has to have a basic social meaning. According to them, Miller's theory of sexual selection does not explain group use of music. Dunbar (2004) assumes that music might have released endorphins in members of hominid groups what made cooperation easier. He verified his hypothesis on a basis of experiment with singing and non–singing members of a church choir. Immediately after singing ceased the singing members were able to tolerate a painful stimulus easier than the non–singing ones from what Dunbar deduces a higher concentration of cerebral endorphins. (Koukolík, 2006, 189) A sound as a tool which helps keeping of a social harmony is used, for instance, by gelada monkeys (Theropithecus gelada). Social sounds (proto–music) of non–human primates are more instinctive and stereotypical than the human ones. (Koukolík, 2006)

Only six–month old children are able to distinguish a whole array of sound characters. This assertion was confirmed, for instance, by Trehuba and Nakata's (2004) researches who studied six–month old children watching a video of their mother. The children were looking at their mother for a longer period when she was singing to them, and for a shorter period, when she talked to them melodically. At the same time a level of cortisol was measured in their salivas. Mother's singing resulted in decrease of cortisol which remained at this level for another 25 minutes after singing. Mother's melodic speaking caused only partial decrease of the level of cortisol and its value quickly returned to its original level. An interesting thing is that, for instance, lullabies resemble transculturally — use simple melody, repetition and a similar pace. (Koukolík, 2006)

Everyone of us knows the thrilling feeling emerging when listening to certain music compositions. Researches based on PET showed that during this thrill rate of heart, breath and electromyogram modifies. Cerebral areas processing emotions and benefit, amygdale, prefrontal cortex and others get highly stimulated. It is remarkable that identical areas get stimulated when experiencing euphoric stimuli — during eating, sexual activity, drugs and so on. (Blood, Zatorre, 2001) According to several experiments, music can change our mood (see for instance: Panksepp, Bernatzky, 2002; Rauscher, Shaw, 1993). According to results of Balkwill and Thompson's researches it even seems that some emotional stimuli present in music (probably a pace and melody modifications) can be transcultural what would prove existence of congenital mechanisms for distinguishing of emotions in music. (Koukolík, 2006)

8.3 Fine Art

According to Paleontological findings our antecedents started to manufacture charms, and necklaces and curve figures from mammoth bones approximately 50 thousand years ago in Africa and 10 thousand years later in Europe. They painted beautiful pictures on rock walls in Chauvet cave, France approximately 32 thousand years ago and continued in this activity for another 15 thousand years. (Koukolík, 2006) Almost 60 thousand–year old paintings were discovered in Australia. Probably also Neanderthals managed to use simpler artistic forms 45 thousand years ago. However, the question still is whether something significant happened to our genetic information (e.g. some type of mutation) and a structure of our brain 60–50 thousand years ago. It was right then that our forefathers started to discover "self–realisation" and begin to express their opinions individually. Yet, we still do not have the answer why they stopped cave painting approximately after 15 thousand years.

8.4 Current Research Examples

S. Zeki and Kawabata assessed a specific cerebral activity taking place when deciding among beauty, ugliness and a neutral feeling. The research was performed in the following way. At first, experimentees evaluated their feelings arisen by pictures (beautiful, ugly and neutral one) which were shown to them according to a subjective scale, and then their cerebral activity was scanned by positron emission tomography while the same pictures were shown to them once again. (Kawabata, Zeki, 2003) Comparison of brain stimulation during observation of beautiful pictures and ugly ones points out to an activity of left medial orbitofrontal cortex. Comparison of brain stimulation during observation of beautiful pictures and neutral ones pointed out to stimulation of left orbitofrontal cortex in Broadmann area 11 and anterior cingulate cortex in Broadmann area 32.

Surprisingly, comparison of beautiful pictures with ugly ones shows stimulation of bilateral but especially left motor cortex, while comparison of stimulation of ugly pictures and neutral ones does not indicate any activity. (Koukolík, 2006) Thus, an activity of medial orbitofrontal, anterior cingulate, parental and motor cortex corresponds to contrast between beautiful and ugly picture. Orbitofrontal cortex gets stimulated during perception of objects we like. The more we like the picture, the higher an activity of orbitofrontal cortex and the lower an activity of motor cortex is and vice–verse. (Koukolík, 2006)

Cela — Conde et al. has also described stimulation of dorsolateral prefrontal cortex during visual perception of a beautiful picture in his study. They examined 8 students of neurobiology who were right–handed, they were 20 years old and had no prior experience with theory of art. Pictures of painters categorised into five groups each containing 40 pictures — abstract art, classical art, impressionist art, postimpressionist art, 160 photographs of countries and city sceneries, etc. represented a stimulus. The stimuli assessed by the students as beautiful stimulated their left dorsolateral prefrontal cortex and their stimulation appeared here 400–1,000 ms after presentation of an object while in visual cortex, it was 130 ms after presentation. (Koukolík, 2006) Neuroscientists' researches imply that Broca's area is not connected only with speech but, for instance, also with musical syntax. S. Koelsch studied which parts of brain get stimulated during the so–called false ending in music. Also studies of other scientists confirmed that parts of brain processing verbal syntax work with musical one as well. For instance, Brown et al. performed a research during which they studied regional activities of various cerebral areas during completion of a melody and a sentence: "September is the best month for Spanish course in Peru because …", "…during this period weather in Peru is perfect". During generation of a melody BA44 and BA22 regions got stimulated while during creation of a sentence it was specifically BA38 and BA39/40 which got stimulated. The rest of stimulated regions were identical in both tasks. On the basis of this fact, Brown and his colleagues came to a conclusion that music and language are processed identically on a level of sensory motor kinaesthetic areas, in parallel on the level of combinatorial processing of complex auditory structures and only start to vary on a level of semantic processing. (Höschl, 122) Musical semantics shares with language more parallels than we probably expected.

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9. Creativity

Key words: *creativity, associationism, gestaltism*

> "From time immemorial, an artistic creative process has been a part of those remarkable inner actions which one could not explain and thus he spoke about "Appolo' s inspiration", "Muse' s kiss", "Ingenio" or "Divine inspiration" with reverence, and as late as Renaissance, artists considered themselves to be extraordinary creatures endowed with something divine or directly demigods."
>
> (cited according to Lukavský, 1978, p. 9).

9.1 Creativity as a Concept

Creativity as a concept is mostly connected with fine art or sculptural works, music composition and writing of poems or novels. However, except for art it is also present in science and technology. Creativity represents one of the phenomena connecting science and art. Scientist' s work is usually characterised as a procedure based on precision, amount of experiments and specific knowledge. Contrarily, an artist is perceived as a quick–tempered individual succumbing to moods and sudden inspiration. Of course, these are distorted stereotypes — principles of scientist and artist' s work differ only very little. When working, an artist needs to be

"kissed by Muse" what is likewise necessary also for a scientist. And vice–verse, as a scientist spends plenty of time verifying hypotheses also an artist sometimes has to revise his work hard for several times until he is satisfied with an outcome.

From the point of view of etymology, a concept of creativity is coined from Latin creatio which we can translate as "production".

9.2 From the History of Study of Creativity

Already the ancient authors attempted to clarify why some individuals are creative and others are not and especially "where" creativity "resides". The earliest explanations divided mind into two separated parts, chambers (however, these have nothing in common with cerebral hemispheres). Inspiration "emerged" in one of them and the task of the other chamber was to mediate these new stimuli either by speech or writing. A creative individual was considered to be enlightened by gods or muses.

Creativity was similarly viewed also during the whole Middle Ages except for the fact that fame of God represented the central artistic motif. With a rise of humanism and Renaissance a certain revival of creative enthusiastic activity took place. The first significant research in a field of creative process occurred in the 18th century. William Duff was one of the first who studied genius of significant scientists and artists. His theory is based on bio–psycho–social nature of creativity. Qualities he considered to be crucial for a genius resulted mainly from imagination combined with a sound judgement and taste, yet hereditary properties were taken into account as well. An interesting thing is that creativity was connected only with men; female creativity was recognised much later.

In the 19th century genetic makeup of a human being is considered to be the basic element of creative abilities. A bridge between both hemispheres (corpus callosum) starts to be taken into account. At the turn of centuries, two approaches, associationism and gestaltism get into opposition. According to associationism,

a creative genius proceeds from effort to cognise individual elements while in gestaltism it is from effort to get to know the whole. As the first, associationist Sir Francis Galton scientifically researched characteristics of genius. In his view, creative ideas are transmitted from unconscious mind into conscious one via associations. The mind of a genius shows natural intellect and dispositions constantly forcing an individual to overcome and solve problems. Galton focused on hereditary effect in his research — according to him, genius of a creator is inherited similarly as for instance physical characteristics. However, in gestaltists' view, creative thinking is a consequence of formation and modifications of gestalts (mental patterns). A creative solution of a problem emerges when an individual views a gestalt in a new light.

W. James represented one of the first authors refusing an idea that creative disposition is inherited. According to him, creativity results from co–operation of heredity and environment; the environment (especially education) has even more significant influence on individual's abilities than genes. Gestaltists dealt predominantly with an issue of cognitive processes during a course of creative thinking. Max Wertheimer diverges from the original assertion of Gestaltists that creativity originates on a basis of modifications of gestalts or a new approach to them; according to his theory, gestalts are formed and created in complex relations which only associations can represent. For creativity, a new approach to a whole issue is important, not new arrangement of its parts.

S. Freud was the main supporter of the idea that creative abilities represent a personal characteristic. During life these abilities get consolidated through experience, nonetheless, individual's experience acquired until the age of 5 years is the most significant. An individual attempts to overcome traumatic experiences from this period, and creativity might be one of the means how to overcome them. Humanistic psychology approached a creative individual as an active agent. Its representatives assumed that creativity develops during the whole life. A. Maslow categorises creativity into primary and secondary one. The primary creativity is a source of new discoveries, game and fantasy, genuine originality and ideas which diverge from what exists at the moment, unlike the secondary creativity which is a type of rational production and represents a characteristic of plenty of capable individuals (especially scientists). Real creativity emerges only through harmony of primary and secondary levels of personality. In Maslow's view, creativity is a sound reaction to environment which can be developed throughout life.

9.3 Characteristics of Creative Persons

Carl Rogers determined three characteristics of a creative person:
1. openness towards experience including also tolerance of ambiguity and ability to accept controversial information
2. ability to evaluate situations according to own, personal standards
3. ability to experiment with risky situations and take part in them.

He also classifies creativity into constructive and deconstructive. The constructive creativity brings benefits to the whole society and is appreciated by it, while the destructive one seems to be redundant, "crazy" and useless. Dacey and Lennon (1998) specified 10 features through which a creative individual can be characterised:
1. tolerance of ambiguity (perception of the unknown as amazing)
2. stimulating freedom
3. functional freedom
4. flexibility
5. willingness to risk
6. preference of chaos
7. delay of gratification (willingness to work on own project for a longer period which does not bring an immediate success)
8. liberation from gender stereotypes
9. persistence
10. courage.

Further, creative individuals are characterised as more sensitive to existence of problems, have a bit greater predisposition to emotional disorders, however, at the same time they are endowed with greater self–control and thus they can manage these predispositions; they can be analytical as well as intuitive in their thinking; they think convergently and also divergently; they have higher average intelligence; they do not resist to receive new information, they like playing; they question status quo more frequently; they are less dependent on attitudes of other people; they do not like co–operation with other people; they often insist on their point in spite of criticism; they are more original. They are fascinated by asymmetry, complexity and extraordinariness. An interesting and so far not completely unequivocally answered question is also a relation of creativity and intelligence. According to Guilford, for instance, creativity exceeds the framework of intelligence (1950). Guilford chose a psychometric approach and focused on performance of experimentees in tasks containing specific aspects of creativity and evaluated divergent production — creation of manifold answers appropriate to a given topic. In this sense, creativity represents an ability to create more. In Ronald Finke' s view, creative people are distinguished from non–creative ones by insight — i.e. — convergent insight through which an individual finds regularity, a structure within a set of seemingly chaotic data, and by divergent insight through which an individual proceeds from a certain rule or a structure and seeks different applications that can be found for it. (Sternberg, 2002)

There is still an unsolved dispute in the study of creativity taking place between authors who believe that genes and heredity play more important role and authors who prefer rather effect of environment. For instance, Finlay a Lumsden (1988) believe that creativity is predominantly a function of biological factors (genes or hormones) and on this basis they created their evolutionary theory of creativity. A biological model of a creative process was introduced by a Dutch neuropharmocologist David de Wied (1995) who assumed that neuropeptides ACTH function as tools enabling communication between neurons and affect a potential for active transmission of impulses between both cerebral hemispheres. The higher the communication between hemispheres and active transmission of impulses is, the higher creativity an individual has. The existing researches imply that creative abilities are secured by good communication between both hemispheres and their mutual balance (Britain, 1985), although, the right hemisphere plays a substantial role in creation of fine and music art. (However, according to some theories, individuals preferring use of a left hand i.e. those who are right hemisphere dominant are more creative).

It is a known fact that in the past creativity was connected with various metal illnesses. This theory was confirmed by studying of several famous artists or innovators. Especially manic depressive psychosis showed as a very frequent disorder. It is assumed that, for instance, Goya and Da Vinci suffered from schizophrenia. On the basis of researches performed in this sphere, scientists came to a conclusion that in a certain sense, manic depression can lead to a higher level of creativity, yet intensive manifestations of this illness are counter–productive for creativity. (Eysenck, 1995)

What is stability of creativity like during individual life periods? According to psychoanalytic theories of creativity, a period until the age of 5 represents the most significant phase. Several authors used biographical date of famous creative personalities and, for instance, Wayne Dennis considers the age around 40 to be a period of artists' prime of creativity. In line with Neugarten' s theory, decrease of creativity in the old age is not caused by old age itself but by cultural stereotypes which old age brings. Based on the researches of Dacey et al. (1989), during a course of life there are six decisive periods:

— a period until the age of 5, 2. initial years of maturing, 3. early adulthood (around the age of 20), 4. a period around the age of 30, 5. beginning of the age of 40, 6. the age from 60 to 65. Gardner (1991) assumes that a critical period for release or block of artistic creativity is a phase between the second and seventh year of life.

Also study of intersexual differences in connection with creativity represents an interesting issue. It seems that women are less creative in music and painting, however they are equally good to men at literature and dramatic art. For instance, women significantly dominate in ballet. Yet, it is questionable whether it is caused by congenital predispositions or learnt gender stereotypes.

Except for these characteristics authors also focus on significance of external factors contributing to creativity. According to Mihaly Csikszentmihalyi (1988) we cannot study creativity through isolation of persons from a social and historical context in which they create. Csikszentmihalyi (1996) asserts that *a field* of creation (painting) as well as *a social field* have to be taken into account when studying creativity (a social context including relations with colleagues in a field but also a wide public.) Environment forming creativity can be divided into micro–social (family, fiends) and macro–social (education, culture and political environment). Without a doubt, family plays a significant role in development of a creative potential. It has been showing that parents of creative children apply less fixed rules in their up–bringing and view children as autonomous individuals.

Children coming from families in which there is a risk of taboo might be smart but probably they will not be exceptionally creative (Albert, 1996). A humour and use of a specific family vocabulary represent an important factor. However, a supportive family environment is not a prerequisite of development of creativity. It is a disharmony, family problems or loneliness which might frequently contribute to it. (Albert, 1992; MacKinnon, 1992; John–Steinerová, 1997) Dacey asserts that creative people experience more traumatic experiences in their childhood. (Dacey et al., 1989) Gardner found out that creative people grow up in a relatively cold family environment where tenderness and loving care for a child are absent. Except for family and cultural environment which affect a creative individual, Dean Simonton (1994, 1997) takes into consideration also a historical aspect. Equally as Simonton,

Howard Gardner (1993) in his study also attempted to take into account historical relations of a given era in which examined individuals developed and created (Gardner performed a depth study of 7 creative persons). According to the outcome of his research, excellent creators were at the right time in the right place, i.e. in the era which favoured a revolutionary change.

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10. Comprehension Problem

Key words: Steinberg, Escher, Ames Demonstration

10.1 "Reading" of a Work of Art

As Gombrich asserts in Art and Illusion, art is not created only by an author but also by a percipient of his work (he speaks about a painter and a person looking at his pictures from a perspective of psychology of pictorial representation). Thus, according to him, if we want speak about art meaningfully, we cannot forget that it comprises of a process of creation of a work and its "reading" or interpretation, comprehension. (Gombrich, 1960)

Let us have a look at "reading" of visual representation in more details. As Gombrich' s study on communication of visual representation shows, especially prior knowledge and conventions play a crucial role here. In 1972, the Americans launched a probe Pioneer 10 into the universe; it bore a plate containing a legacy to extraterrestrial civilisations placed on its surface. A simple representation (male and female figures, a solar system) should have shown to a possible finder what creatures which had launched the probe look like and it depicted a solar system with our planet, as well. Nonetheless, it is questionable what a finder will actually see in the picture. How would he read a raised hand of a man symbolising a greeting? Even plenty of inhabitants of our Earth (the Indians or Chinese) would not understand this gesture on the basis of their own experience and conventions. How would the finder infer that there are two different schemes — the man and woman and the solar system?

10.2 A Role of Memory

A role of knowledge, memory and experience can be realised best during an attempt to read a representation, right at a moment when we will miss them for interpretation equally as the extraterrestrial finder. (Mikš, 2010)

The role of memory and prior experience was stressed by an American representative of pragmatism W. James. According to him, when we are for instance reading some text a plenty of what we think that we read is provided through our memory. And thus we overlook print and typing errors because we imagine proper letters although we are looking at the wrong ones. Similarly as James also Gombrich became aware of the significant role of prior knowledge and experience, especially when he was monitoring broadcasting of foreign radios for BBC during World War II. A lot of enemy broadcasting could not be heard very well and thus he trained himself in interpretation of fragments of talks hearable with difficulties. (Mikš, 2010).

"In order to hear what was told, you had to know what might have been told. So you selected from your knowledge of possibilities of certain combination of words and tried to place them into sounds you heard. Then there appeared a double problem — to think about possibilities and preserve a critical ability. It means that the one who got carried away by his fantasy and might have heard any words could not take part in the game. You had to keep flexible projection, remain able to try new alternatives and admit a possibility of a defeat. The most exciting moment was when our expectation got stable and strengthened, you stopped realising your own activity and sounds fit in correct places and turned into expected words. This effect of suggestion was so strong that if you wanted to verify your interpretation with your colleague, as a rule,

you were not able to interpret it. The expectation created an illusion." (Mikš, 2010)

An interesting example of an illusion is a demonstration of Adelbert Ames Jr. consisting of three peepholes through which three different objects located in a certain distance can be seen by a single eye. An object in each peephole looks like a chair made of metal tubes, yet if a viewer moves from the peephole and observes objects from a different angle; he finds out that only one of these objects represents a real chair. The other one is a curved oblique object and the third one is not even complete. It consists only of various wires placed in front of a scenery where there is painted only what a viewer had assumed to be a chair seat. A remarkable fact about this illusion is its persistence — it keeps controlling a viewer even after he learnt the truth because when viewers returned to the peepholes the illusion persisted despite their will. According to Gombrich it is so due to the fact that there is only a single means of interpretation of a visual model which we have before us, basically we are blind to the rest of them because we cannot imagine them. Unlike the chair, these given irregular objects have no name and place in our experience. Gombrich remarks that from various possible shapes we always choose the one we know. (Gombrich, Art and Ilusion)

A process of perception of a work of art (of course not only of it) requires continuous activity taking place at the background of our experience. We permanently verify our assumptions. In this context Gombrich uses an example of a canvas Wivenhoe Park by John Constable which we would not comprehend without an assumption that the grass is green and that there are not Lilliputians but other figures located in the distance and so on. What is important — all interpretations fit together and mutually support and thus we have a compact picture before us.

10.3 Ambiguous Interpretations

However, the art frequently aspires to exclusion of such equivocal interpretations. Just think about Escher or Steinberg's pictures — we have no key to comprehend which hand draws the other, all interpretations are right but none of them is coherent as such. František Mikš compares these intentionally ambiguous interpretations to philosophical paradoxes. (Mikš, 2010)

Cubism represented a well–known and radical attempt to exclude only a single interpretation of a picture. Cubists tried to adjust effect of a perspective, colours and shading in a way disabling mutual interaction, they rather wanted to create an encounter leading to the deadlock. For instance, Picasso's Still Life depicts individual objects in a way securing that they would contradict any test of coherence. Whenever we attempt to see a pitcher as a three–dimensional object we come across some disharmony forcing us to begin once again. And thus the author keeps us under a pressure of infinite interpretations and we never come to a coherent and final interpretation. As Mikš remarked, our ability to read a picture will keep us busy until we become willing to play this game with the author. (Mikš, 2010)

Also a philosopher K.R. Popper commented on the given problem of interpretation although he did not explicitly deal with art. Yet his thesis stating that there is not an impartial observation is applicable on the phenomenon mentioned above as well. According to him, every observation represents a purposeful activity managed by a so–called horizon of expectation — there is no passive experience or perception outside a context of expectation. In his view, a hypothesis always precedes perception. Intellectual but also artistic structures are formed and modified gradually, not at once. By this assertion he opposes modernists and supporters of independent thinking according to whom social structures are created at once in line with a plan. In Popper's view, we cannot start anything from a beginning, freed from the past — also artists who

believe that they come back to commencements use information in a developed stage. The past is present in everything what we do and where we are. (Popper, 1995) We cannot separate ourselves from it (for instance, Gadamer pointed out to this problem when analysing a positive role of a prejudice of a tradition — for more see his text Truth and Method). And so the tradition becomes a very significant background and at the same time also a starting point of our activity, although we would like to cope with the given tradition critically as it usually happens in art and science.

Popper similarly as his friend Gombrich believed that there are not two cultures — rational scientific and irrational aesthetical but only a single one. A scientist and an artist as well proceed from available knowledge, use intuition and imagination which they put to critical verification. (Mikš, 2010)

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11. Significance of Beauty and Art in our Life

Key words: *therapy, art therapy, applied art, design*

11.1 Therapy

What do we basically expect from art? Why do we devote our energy, time and money to it? Not taking into consideration its cognitive function, we usually expect from it a beautiful experience, relaxation, game and frequently also a therapeutic effect. Art is more and more used during treatment of mental disorders, it has become an important therapeutic tool. Love for music, pictures and dramatic art arouses trust and attention, stimulates feelings. Thus, an exceptional relation within which everything takes place differently than in the world of everyday ordinariness forms. Art takes our mind of various emotions and stress; we get rid of negative tendencies of mind.

Art psychotherapy usually represents an additional means of treatment and therapeutic artistic techniques can be used individually and in a group, as well. The following art therapies can be listed among the most well–known and markedly effective: art therapy, music therapy, psychogymnastics, psychopantomime, choreotherapy, bibliotherapy, psychodrama, dramatherapy, film therapy and digital art therapy.

Art therapy — it is a therapy performed via fine art although the term art therapy is not completely apt ("art" denotes an artistic activity in general). Art therapy means are drawing, painting and

modelling. Through these activities hidden creative forces, personal characteristics and stances get revealed. A process of fine art creation distracts an individual from abnormal ideas, develops new interests and supports the appetite for life. And what is substantial — an aesthetic value of a creation is not important at all (it applies also to other art therapy techniques). A client can express something he cannot tell through a fine art creative activity, it is a means of emotional relaxation and self–realisation — a client acquires objective as well as subjective knowledge. An activity is usually performed in a group — participants are given fine art materials and their task is to express a topic graphically; subsequently, they express a concept on which they focused most, experienced or wanted to communicate and so on. The rest of the group equally takes part in a debate — other therapy members try to guess what an author wanted to express, images of others about the given client–creator are projected on the picture and thus it becomes a medium enabling others to imply attitudes about the client to himself, own problems are also present without regard to problems of an author of picture, i.e. creations of a group represent a starting point for future psychological work. (Kulka, 2008, 66)

Music therapy — a therapy performed through music has a long history since already ancient civilisations assigned a special psychological significance to music. The objective of music therapy is to arouse client' s emotionality, take his mind of stressful experiences, stimulate his fantasy and communication on non–verbal level, eliminate emotional pressure, provide a client with new experiences, increase his aesthetic sensitivity and harmonise a mental life. The music therapy can be performed in two ways — by composing of music and listening to music. It is often combined with other artistic therapy techniques, for instance, with a dance therapy or dramatherapy. The music therapy can be performed individually or in groups as well. During a productive music therapy clients improvise on music instruments, sing or perform musical and dancing creations. The goal is to make creator–client relaxed, express himself

and communicate. Again, there are various techniques applied in a listening therapy — communicative, reactive and regulative one; a therapist can ask client what music expresses; collective listening to music stimulates a feeling of sharing, builds mutual trust. Let us mention several songs usually used in the music therapy for illustration — for instance Beethoven' s Romance for Violin and Orchestra F–dur op.50, selected Mozart' s symphonies, Vltava and others. Music arousing strong emotional reactions is always chosen.

A therapist diagnosis a client by means of music, uncovers his emotionality, aesthetic preferences, level of intelligence and speed of his reactions. This type of therapy helps client relax, harmonise, develop interests, leads to reasoning about oneself, environment, life and so on.

Psychogymnastics — this therapeutic method utilizes motion as a means of self–expression and communication. Clients practise a proper posture and subsequently move to a total body workout and relax their body. Meanwhile they are aware of a feeling of tension and release and a contact with others. The psychogymnastics can develop into psychopantomime mostly focused on a fantasy through depicting of various actions by motion. Topics of pantomime scenes vary — clients can perform ordinary situations as for instance: selling and buying of something, choosing and giving a present, or they can deal with interpersonal conflicts — giving up something precious, grievance, a quarrel at a workplace and so on.

Bibliotherapy — is a therapy by means of reading. It represents treatment of mental disorders through reading of properly chosen books. A choice of books has to correspond to client' s interests and abilities — improper selection might even worsen a state of health. In this type of therapy, a rational aspect is more foregrounded, imagination gets developed and emotionality and catharsis get stimulated. Again, a therapy is performed individually or in a group. Patients are brought face to face with their own problems, seek solution, find behavioural patterns in literature, overcome emotional isolation, etc.

Psychodrama — is improvised dramatisation of an action determined by psychological intentions, client's performance is not prepared and always focuses on his own life. A stage, protagonist, director, supporting actors and audience embody means of this therapy. A significant moment of a therapy is to make an actor–patient to be the one who is also in a real life on the stage. A psychotherapist manages a stage direction — watches a scene, interferes in it, encourages a client to perform more expressively, if necessary, asks client to repeat selected passages or suggests other versions of a course of play and so on.

The goal of psychodrama is especially to improve a social interaction and interpersonal intelligence, acquire an ability to relax, cope with emotions, change non–constructive behaviour, widen a repertoire of life tasks, acquire an ability of spontaneous behaviour, develop imagination and self–confidence and so on.

Film therapy — is a therapy during which a client watches a film. A film is used similarly as a book in bibliotherapy, yet, it applies visual images and sounds. Digital art therapy represents an innovation of last few years. A digitalisation technology enables not only to record reality but also to process it in various ways, what multiplies possibilities of a client, creator and consumer as well. (Kulka, 2008, 72)

11.2 Applied Art

Except for the fact that art fulfils therapeutic function, we cannot overlook his oldest manifestation — a utility function. The term applied art is used for artistic elements present in objects of everyday use. Its objective is to make use of ordinary objects (cup, pen, female handbag, chair, etc.) more pleasant, at the same time a user's fantasy gets stimulated. Individual types of applied art are: glass art, architecture, jewellery art, fashion production, furniture making, art smithery and others. We surround ourselves by objects which are not only useful but we also like them and pleases our

eye. In line with this principle we construct and furnish houses, build public space, choose clothes (not only to protect us against weather conditions but also — or frequently just — to be beautiful, properly matched, draw attention). Advertising means (a poster, advertisements, a brochure, industrial graphics) represent a separate chapter whose primary task is to draw attention. A cover playing irreplaceable tasks when selling products represents the most mass advertising means. There is no doubt about importance of its aesthetic layout.

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Mgr. Renáta Kišoňová, Ph.D.

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