

Exploring the nature of today's visual perception

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Abstract

Visual perception can be defined as the ability to read all kinds of visual information despite it is a natural phenomenon or a cultural artifact. It is believed that human visual perception is based on some physiological factors but it is also to some degree shaped by culture. In a perspective of today's visual culture it means that although, there is an essential relationship between visual representations and the outside world, the way people perceive images also depends on their visual experience. Since today's world is dominated by images, young generations have undergone a visual training on an unprecedented scale, which must have influenced their visual perception.

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1. Visual perception

It is generally acknowledged that our experience of the world is to some extent mediated. The world is not simply and objective but constructed in the process of perception. Therefore, being brought up in a visually oriented society, we rely mostly on vision. Sight tends to be our most important sense. The primacy of the sight in the Western culture has its origins in antiquity. The tradition identifying vision with reason dates back to classical Greek philosophy. The supremacy of sight emphasizes our descriptive vocabulary dominated by visual metaphors.

Probably all European languages include proverbs and sayings which refer more or less literally to the sight and which identify the activity of seeing with comprehending the

complexity of a particular situation. In English, it can be said for example “Look before you leap” which means to think over all possible consequences of own actions or that “Beauty is in the eye of the beholder” – everyone has a different taste. It is also likely to stress too great trust not to say blind trust in the sight as for example “All that glitters is not gold”, “Don't judge a book by its cover” just to mention a few. English verb ‘to see’ has several meanings and a part of them is connected with reason for example ‘to understand’ in expressions such as ‘see the point’, ‘see reason’, ‘I see what you mean’ etc. or ‘to have opinion’ – ‘to see things as they are’, ‘the way he sees it etc. Where as, the lack of vision is associated with negative feelings. Therefore, being blind means not be able to see literally and figuratively as in the example taken from Oxford Dictionary “She is blind to her husband’s faults” (2000, p. 126). Blind can also be faith, obedience, panic, chance and force of nature (op. cit., p.126) all of those expressions denote something that cannot be rationally controlled.

Although European culture was shaped to a large extent by own visuality, the first modern scientists who carefully examined the process of visual perception were Gestalt psychologist - Max Wertheimer (1880-1943), Wolfgang Köhler (1887-1967) and Kurt Koffka (1886-1941). Gestalt psychology concerned the perception of ambiguous images imposing specific interpretative problems. The research proved that there are some features, which are universal in the human visual perception. Originally, Gestalt psychologists noticed that seeing a visual image people tend to separate a dominant shape. Dwelling on this discovery they recognized other fundamental principles governing visual perception:

Proximity – figures or shapes which are close together seem to be connected,

Similarity - figures or shapes which look alike are associated,

Good continuation - contours based on smooth continuity are preferred to abrupt changes of direction,

Closure – figures are likely to be interpreted as ‘close’ rather than ‘open’,

Smallness - smaller elements are considered as figures situated against a background,

Surroundedness - elements which seem to be surrounded by others are recognized as figures,

Symmetry - symmetrical elements tend to be seen as figures against asymmetrical backgrounds,

Pragnanz – seeing the ambiguous picture people choose the simplest and most stable interpretations (e.g. Swanston, Wade 2001, p. 74 -79).

2. Cultural influence on visual perception

The study of visual perception indicates that the process of human visual perception is generally universal, however, some features are to some degree culturally-specific and depend on particular cultural environment. Contemporary experiments conducted by

psychologists and anthropologists proved that people brought up in different cultures developed divergent perceptual skills, which strongly influenced their perception of the outside world. A few examples of this phenomenon provides Daniel Chandler in his work on visual perception (Chandler Internet source no 1). Chandler describes the research carried out by the anthropologist Colin Turnbull. Turnbull spent a few years in the former Congo in the 1950s and notified that when the members of a tribe used to living in the dense forest, went to the plains and saw grazing buffalo several miles away perceived them as insects. The anthropologist realized that people without previous experience with seeing distant objects saw them as small, because in forest where vision was very limited there was no need to associate the size with the distance.

The concept that human perception is conditioned by cultural and psychological factors, resulted in developing a whole range of psychological tests assessing people's psyche. One of the most acknowledged - the Thematic Apperception Test (TAT) was developed in the 1930-ties by Christina D. Morgan and Henry A. Murray. The TAT was designed to evaluate person's psychological behavior. The TAT consists of 31 ambiguous pictures, which depict various social and interpersonal situations. The tested person is supposed to tell a story about each picture. The TAT is still widely used (although the original cards introduced by Morgan and Murray in their experiments were replaced with the new ones, more adequate for a modern world) to explore dreams and fantasies or the factors motivating people's choice of friends or occupations. It helps people understand their personality and undertake some important life decisions. Regardless of the psychological significance of the TAT, the results of such a test have also great importance for exploring visual perception.

Searching the Internet for some examples of the cultural influences on visual perception I found a very interesting description of a contemporary test carried out on the basis of an original TAT card (Internet source no 2). Sarah Hak showed a Morgan's picture to 25 people with various backgrounds. Psychologists described the pictures as "a young man lying prostrate on a bed and a young women standing outside the door with her head buried in her hand" (S. Hak, 2002). The picture initially had a caption saying "Why did I marry him?, she said dazed Why?", but S. Hak omitted it, as giving too much information. The results demonstrated that factors such as age, sex, religion, ethnicity, occupation and marital status slightly influenced the individual perception. Nevertheless, general assumptions related to this picture were similar. Without a knowledge of the original caption, most people indicated that the women was upset or in the despair. The reasons for describing this women as upset differed significantly, and seemed to be age and sex related. However, one of the most important factor impacting the interpretation of this picture turned out to be personal experience. Hak noticed (although she treated this issue marginally) that people who had ever been on the boat, interpreted this scene as being set on the boat or a ship, despite the lack of any noticeable clues suggesting this idea. Some

viewers even attempted to recognize the type of the ship characterizing it as a “luxury ocean liner”.

What I personally find the most interesting is the fact that a picture used by Morgan and Murray was originally, an illustration of the American novel “Capitan Archer’s daughter”, altered to fulfill the requirements of the TAT. The original version of this picture depicted two figures in a ship’s cabin. However, all elements relating to the nautical provenience of the picture had been removed during the adaptation.

I believe that descriptions placing this scene in the maritime environment, despite the absence of the specific elements, clearly indicate that the personal experience determinates the perception and interpretation of the pictures. Therefore, the knowledge of a real-life situation seems to have immense importance for perception, shaping visual communication, at least at its basic level.

3. Representation and resemblance

The inquiry into the nature of visual perception cannot exclude the question of rules that organize creation and comprehension of visual images and forms. At the heart of this dispute lies the relationship between pictures and reality. One of the most fundamental problems related to this issue is whether the pictorial representation is based on natural resemblance or cultural convention. From Renaissance nearly all theorists assumed that an ideal representation was the imitation of the outside world - mimesis. Mimesis has been one of the most significant factors employed in creation and evaluation of the works of art (D. Hrehová, 2008, p. 159-164) for many centuries, which has a great impact on contemporary perception of art and images. I am strongly convinced that the persuasive power of an image used in advertising or television programs results largely from the deeply-held belief in mimesis shared by the majority of people.

Although the mimetic tradition is still rooted in our attitude toward fine arts and other visual representations, nineteenth century artistic revolution made people realize that imitating the nature had always been subjected to specific visual conventions. We may assume then that visual perception is formed partially by culture. According to the stance a picture fails to depict reality, instead it represents a set of cultural conventions. The main premise of this theory known as conventionalism results from the fact that pictures cannot reproduce a whole range of visual factors, for example, all levels of brightness or darkness. What is more, colors depicted on a picture are often different from those seen in reality. Two-dimensional surface of a painting can illustrate neither real depth nor third dimension. Most pictures can be viewed from only one point of view, which does not occur in actual environment. Eventually, various pictorial representations omit many important details. Therefore, people are able to read and understand a picture only because they are

acquainted with the conventions constituting the representation. This knowledge is acquired often unconsciously through the exposure to a broad range of images.

The idea of the arbitrariness of the pictorial representation was expressed by an outstanding art historian Erwin Panofsky in the 1920. In the essay "Perspective as Symbolic Form" (E. Panofsky, cited in P. Messaris, 1994, p. 4). E. Panofsky argued that linear perspective formulated in Renaissance is an arbitrary representational style - a "symbolic form" which does not depict real spatial relations but certain word view. Initially, this concept was marginalized since the history of art was perceived as a gradual process striving for perfection recognized as mimesis. Consequently, the development of linear perspective used to be identified with the greatest achievement of European painting. (This view on art prevails also today, almost every literate member of the Western society takes for granted the fact that linear perspective depicts ideally the depth).

Although, E. Panofsky's essay caused an uproar among theorists, theoretical revolution which refuted previous disciplinary matrix dominating the tradition of interpreting images took place 40 years later. In 1961, Ernst Hans Gombrich published an extremely prominent book on human perception entitled "Art and Illusion" (E. Gombrich, 1961, p. 12). The author described the history of pictorial representation from drawings in the caves at Lascaux to Impressionism as the myth of innocent eye. For E. H. Gombrich the eye is not innocent, our sight is formed by the culture which acquaints us with particular systems of representation and provides 'correct' interpretation. Understanding of a picture is not a result of identifying what the picture depicts but a consequence of recognizing its system of representation. Gombrich's theory (developed also in his subsequent book - *The Image and the Eye*, 1982) assumes that the resemblance of an image to reality is governed by cultural conventions and therefore pictorial interpretation requires some previous knowledge. E. H. Gombrich emphasizes the fact that every culture has different standards of realistic representations. The link between a picture and reality is arbitrary, people brought up in the diverse societies interpret the same picture differently because they are adopted to certain systems of representation. Therefore, a Medieval book illustrations which appear to be artificial for the contemporary members of the Western culture used to be realistic for the Medieval viewers.

The most intense critique of the resemblance theory of depiction presented Nelson Goodman in his book: "Languages of Art: An Approach to a Theory of Symbols" (N. Goodman, 1976). N. Goodman premised his theory on the assumption that resemblance is exclusively a cultural convention based on current pictorial practices. According to this stance, pictures are symbols in systems of representation in the same way as words and sentences are symbols in languages, which signifies that pictures are as arbitrary as language. Since it is impossible to identify the fundamental rules governing the correspondence between pictures and their referents N. Goodman argues that in a picture "almost anything may stand for almost anything" (N. Goodman, cited in Lopes 1996, p. 57). Every representation can be perceived as realistic, for example, if the culture considers it to

be so. Similarly as sentences have meaning in language, pictures refer to something only within the specific symbol system. Consequently, a picture denotes its referent but also the entire symbolic system of representation.

Conventionalism has become a generally accepted theory, however, it does not seem to elucidate all relationships operating between an image and the outside world. Even if we reject the most extreme version of conventionalism (anything can stand for anything) and take for granted that a visual image is to some degree formed by cultural conventions, we must admit that the pictures somehow resemble their referents. Otherwise, we would not be able to recognize any visual images except those produced within our culture, which is nonsense. In addition, there are not any scientifically proved examples of people being not able to recognize a depicted object only because they were not acquainted with certain pictorial style. Descriptions of experiments conducted by initially missionaries or travelers and then anthropologists, provided evidence that people who had never had any experience with pictorial representation did encounter difficulty in figuring out the subjects of a picture. But, does it signify that the whole system of pictorial representations depends only on culture? The knowledge of pictorial conventions certainly enriches human perception but it is not indispensable to infer what the picture represent. Some visual conventions simply seem to be transparent to the majority of viewers.

Moreover, it is impossible not to notice that the relation between image and reality undergoes a metamorphosis. The spread of visual media resulted in not only in establishing a new mode of communication but also in constituting a new form of pictorial references. Visual images today, tend to represent other representations instead of the outside world. Images that we encounter most frequently, namely those used in the advertisements often emulate other images, for example, acknowledged film takes or old paintings. As Eduardo Neiva states: “Images act as surrogates of reality, without being reality itself; instead they are signs (E. Neiva, 1999, p. 83).

4. Visual perception in practice

4.1. A real-life analogy

The starting point for my further findings represents a theory developed by Paul Messaris, the author of the most prominent book on visual literacy “Visual Literacy: Image, Mind and Reality” (P. Messaris, 1994). The theoretical framework established by P. Messaris puts a new perspective on visual communication and what is more, offers the effective analytical tools for conducting visual researches. I find “Visual Literacy” important because its author takes a stand on the issue whether visual conventions prevent the inexperienced

viewer (a person that does not have a previous experience with certain types of pictorial representations) from understanding a picture, photograph or film.

Scrutinizing visual conventions governing still images such as drawings, paintings and photographs P. Messaris enumerates three categories of obstacles, which hypothetically should pose difficulties during pictorial identification:

1. pictures which do not represent colors and illumination, for example, black and white outlines and photographs,
2. pictures trying depict the third dimension on the two-dimensional surface,
3. pictures ignoring many details, for example, sketches.

All of above-mentioned pictures demonstrate the discrepancy between a picture and reality, however, according to P. Messaris “There is considerable continuity between picture perception and everyday, real-vision” (P. Messaris, 1994, p.13), which assists in the recognition of unclear depicted objects. Since in real life we are able to identify someone or something despite the lack of many visible details, this knowledge seems to encompass also pictorial perception

“Our ability to interpret such incomplete images as sketches and stick figures may be an extension of an everyday, real-life perceptual skill rather than something we have to learn with specific reference to pictorial conventions... Furthermore, many pictorial conventions that might at first blush seem quite ‘unrealistic’ appear in fact to be interpretable on the basis of any viewer’s real-world visual skills” (P. Messaris, 1994, p. 13).

Film and television by virtue of being an amalgam of pictures, language and sound imposes different perceptual problems. Conventions employed during the production of film or television program may appear to be totally artificial, therefore, incomprehensible for inexperienced viewer. P. Messaris refers to three general categories:

1. meaning formation through successive presentation of partial views,
2. interpretation of characters un verbalized thoughts and feelings by the juxtaposition of facial expressions,
3. narrative techniques intended to evoke emotions through variation in camera positioning vis-à-vis the scene’s action.

The first category is supposed to assist in forming a coherent image of the world, created by the subsequent takes. Contrary to expectation, the experiments cited by P. Messaris had proved that even inexperienced viewers – the inhabitants of an isolated village in Kenya did not encounter difficulty in perceiving a video narrative as a coherent whole. P. Messaris believes that this phenomenon indicates that the ability to make sense of a film must be based on a “preexisting, real-world cognitive skill” which enable people to produce one impression of their immediate environment, constituted by throwing multiple looks. The second category of conventions- image juxtaposition is also based on real-life skill, namely the ability to recognize facial expressions in specific contexts. This competence is acquired through the process of socialization. The peaceful coexistence of all members of society

depends to a large extent on this ability. The last type of convention presents similar parallel to day-to-day situations. The use of camera angle supposed to illustrate human weakness or power, emulates the feeling we have viewing other people. If somebody is big we have to look up at him or her, correspondingly, watching somebody small we have to look down at him or her.

All of those real-life conceptual clues assist us with recognizing visual messages. However, the precise interpretation of such messages requires also contextual knowledge (knowledge based on the acquaintance with natural and social phenomena) which reduces potential ambiguity. Concluding the considerations on visual literacy P. Messaris states:

“I believe that the distinctive feature of pictorial signification is that it is built on our everyday, real-world skills of physical and social perception. This property makes images a unique mode of communication, clearly distinct from language and the various other modes” (P. Messaris, 1994, p. 40).

4.2. Exploring the nature of today’s visual perception

Exploring the nature of today’s visual perception, I would like to consider one basic question namely, whether contemporary viewers surrounded by numerous images demonstrate perceptual skills enabling them to comprehend visual messages created according to conventions they do not know. Another fundamental area related to the first one is the issue of relationship between visual representation and its referent and our ability to recognize particular objects depicted through the medium of paint.

On the basis of theory of perception I assume a priori that scenes depicting acknowledged situations regardless of their conventional provenience would not pose interpretative obstacles. Viewers can, however, face difficulty in identifying highly abstract scenes related to specific cultural practices such as religious ceremonies, funeral processions, initiation rituals etc.

4.2.1. Procedure

In order to explore the above question I asked 60 people to view four pictures and describe them. The age of the viewers ranged from 10 to 60 years old. The biggest group - 25 people represented teenagers. It was my intention to examine additionally whether television and computer graphics would significantly affect visual ability of the so-called Generation Z. The participants came from different social backgrounds, however, all of them were the inhabitants of a big city, which could influence the interpretation.

In order to avoid familiarity with specific pictorial conventions I have decided to choose representations produced by ancient culture. Ancient Egyptian painting, significantly divergent from Western art seemed to fulfill this criterion. According to conventionalist approach Ancient Egyptian pictorial style - frontalism, imposes a few fundamental obstacles preventing contemporary viewer from recognizing particular objects. A typical human depiction represents a figure whose chest is seen from the front view, whereas the head, trunk and limbs are seen from the side view. The legs are turned with one foot placed in front of the other. Similar twisting concern the eye depicted in a front view despite the fact that the head is shown in profile. Consequently, the figure looks as if being viewed from two incompatible points of view. Moreover, Egyptian painting lacks linear perspective or any other aesthetic form suggesting the depth. The size of figures depends on their social status rather than compositional factors.

4.2.2. Pictures

The participants of my test were shown four pictures. The pictures I chose were originally illustrations of a book on ancient Egyptian painting (A. Mekhitarian, 1992). Every picture was given a caption explaining depicted scene. Since the purpose of my research was to recognize particular occupations or situations, citing descriptions I omit the information related to art history such as artistic provenience, composition, technique etc.

Picture number one - "Threshing" (p. 77) (Thebes, Menn's tomb, about 1422-1421 B. C.) was described as: "a foreman negligently leaning against a long stick seems to scold his workers, which irritates the peasants."

Pictures number two - "Mourners" (p.115) (Thebes, Ramose's tomb, about 1411-1375 B. C.) - the author of "Egyptian painting" concentrated his attention to the fact that although mourners adopt rigid stance suggesting the profound distress, the faces do not express sorrow except for a few tears.

Picture number three - "Funeral Procession" (p.114) (Thebes, Ramose's tomb about 1411-1375) -the brief description denoted a number of things carried by porters necessary for posthumous life, for example, catafalque, chest, sandals, pottery, chair, stick, bed.

Pictures number four - "Plowing Jar's Fields" (p.149) (Thebes, Senneg's tomb, about 1200 B. C.) - according to A. Mekhitarian this painting depicts Senneg who is plowing the field. It is worth mentioning that Jar's Fields represent ancient Egyptian Paradise. In order to go to Paradise after death Egyptian noblemen had to prove their diligence by participation in everyday occupations such as plowing, threshing, hunting etc.

4.2.3. Findings

Pictures number one and four depict scenes which are, in my opinion, still deeply-rooted in our culture, though take place relatively seldom as today's agriculture is dominated by mass production. Pictures number two and three illustrate ancient rituals unusual to contemporary culture. Therefore, I assumed that majority of viewers would recognize the first and the last pictures, however, they would have difficulty in interpreting middle representations.

The results proved my general assumptions, however, ambiguous pictures turned out to be less problematic than I had expected.

All viewers (except for one 10 years old girl) indicated that scenes had taken place in ancient Egypt. Consequently, depicted figures were described as ancient Egyptians, ancient slaves or peasants.

All of answers claimed that the first picture depicted the grain harvest. In addition, half of the viewers stated that the person on the left is a supervisor of two people on the right because the first figure was bigger than others. To my great surprise, it turned out that the size of figures was the most important factor influencing the assessment of social status of the characters. Although one person pointed out that the size, difference resulted from conventions governing ancient Egyptian pictorial style, most observers did not provide any explanation why a bigger person was considered as more important. This finding is especially interesting because according to majority of theorists people brought up in Western society, who are accustomed to linear perspective should associate the size of figures with their position not social status. The only explanation that comes into my mind is the massive impact of television, computer graphics and other visual media which emphasize power through close-ups magnifying figures size.

Second picture was described by majority of viewers as a group of praying woman. However, several observers entitled this scene as "lament". Most answers specified why these women were praying, suggesting that they begged their "Egyptian god" or "Ra" for grace. Although I considered the recognition of this scene extremely difficult (contemporary cultural practices differ significantly from ancient Egyptian rituals) interpretation of this picture created insignificant problems.

Picture number three also turned out to be relatively easy to recognize despite my expectations. Half of observers stated that it was a depiction of "Egyptian Funeral Procession" Other answers claimed that Egyptians were making a sacrificial offering in honor of their god or pharaoh.

Last picture was unanimously recognized as plowing. Additional information related to this picture concerned an ox. A large group of viewers noticed that Egyptian treated an ox badly. Teenagers tended to underline that a person abused this poor animal.

The results of this test indicate that interpretation of images does not mainly depend on a knowledge of particular visual conventions. Images produced by one culture can be easily interpreted by members of another culture. Despite cultural differences the relationship between pictures and their referents provides the basis for understanding depicted scenes. Furthermore, people are able to interpret divergent pictures relating them to their everyday experience. The knowledge of specific conventions or cultural divergences undoubtedly enriches perception, providing additional context, however, it does not make pictorial identification indispensable. The results of my research support Messaris' central thesis concerning the nature of visual literacy who stated that:

“There are good reasons to believe that in substantial degree of cross-cultural similarity in basic visual syntax. However, there may be exceptions to this principle, both in the form of cultures with unique features (e.g., people leaving in dense jungles, with no opportunity for truly long-distance perception) and more significantly in the form of those aspects of visual syntax having to do with social rather than physical perception” (P. Messaris, 1994, p. 172).

4.2.4. Visual perception and Generation Z

As far as the perception of generation Z is concerned most descriptions provided by teenagers did not differ considerably from those offered by the adults. Teenagers, however, concentrated their attention on the primitive agricultural methods or tools and what is even more important, on the inequitable social system allowing to abuse “Egyptian slaves” in the first picture and “poor animal” in the fourth illustration. In my opinion, those remarks have their roots in the deeply-rooted stereotype of an ancient Egypt perceived as a state of slaves governed by a callous pharaoh. It exemplifies the application of the additional cultural knowledge in the interpretation of the ambiguous pictures. Generation Z did, however, adopt a new mode of visual communication (D. Hrehová, T. Bilančíková, 2007, s. 195-200). To my great surprise, five young people considered four unrelated pictures as one story. Although, the description of particular pictures remained almost unchanged, their interpretation acquired wider dimension, providing a story structure. According to this story, the first picture depicts harvesting ancient Egyptians, second – Egyptian women praying for good crops, women prayer supports the harvesters. The third picture shows ancient Egyptians moving to another place since the prayers were not answered and the crop failure resulted in widespread famine. Fourth picture depicts plowing a new fertile land where Egyptians can begin a new happy life. Although, nobody has provided theory explaining this phenomenon, the evidence suggests that visual media have already introduced a new mode of visual communication. Teenagers being accustomed much more than the adults to the visual media have acquired new visual ability. Therefore, rapid

changes of takes employed in video clips, seem to enhance the ability to connect loosely related images into the reasonable whole. I believe that the ability to read images assists teenagers with the understanding of the world. They do not have to trust only in words, they can also benefit from images.

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