

The Factors Affecting the Perception of Still and Moving Images (Using multiple methods)

Dr. Hani Khalil Farran

Associate Professor/ Department of Applied Arts Faculty of Fine Arts/ An-Najah
National University

Abstract:

This research aims to study and analyze the factors affecting the visual perception of the content of images (still and moving). That is, defining them, highlighting the differences between them, and clarifying the concept of perception in detail. This is achieved with regard to the physiologic and semiotic connotations of an image as they are the foundations of perceiving and understanding images. In addition, the study aims at demonstrating the most prominent psychological theories in the field of visual perception and image understanding. It also aims at clarifying the mechanisms of sight, and how the human eye physiologically recognizes objects and different shapes by understanding the semiotic and semantic allusions evident in them.

المخلص

يهدف هذا البحث إلى دراسة وتحليل العوامل المؤثرة في عمليات الإدراك البصري لمحتوى الصور (الثابتة و المتحركة)، وذلك بتعريفهما وإبراز الفرق بينهما، ومن ثم توضيح مفهوم الإدراك بشكلٍ مفصّل، و تناول الناحية الفسيولوجية و الدلالات السيميائية، التي يعتمد عليها بإعتبارها مرتكزات فهم و إدراك الصورة، بالإضافة إلى إستعراض أهم النظريات السيكولوجية في مجال الإدراك البصري وفهم الصورة، وكذلك توضيح آلية رؤية العين للصورة من الناحية الفسيولوجية، و إدراكها للأجسام والأشكال المختلفة، وكيفية فهمها للدلالات السيميائية التي تتضمنها الصورة.

I- Introduction:

After the developments of scientific progress that the world has witnessed, especially in the area of communication technology, most of humanity's lifestyle has changed. In the past, it took a great amount of time to deliver a message and people were physically and financially burdened by means of communication. Presently, people are able to contact every place in the world, available in video and audio in fractions of seconds. Scientists refer to this as The Visual Stage which emerged in the latter half of the twentieth century⁽¹⁾.

It is without any doubt that we are living through a time where an image is worth a thousand words⁽²⁾, ascending over both oral and written discourse. This was confirmed by scientists discussing the dominance of images by observing how they have imposed a phenomenon that has changed written culture, educational programs, as well as the viewing of art by both individuals and groups.

This phenomenon also established itself in communities and the cultural history of the world by abolishing the great influence that words used to have and replacing them with the more expressive images⁽³⁾. This came as a result of the valuable uses that images provide us with, especially through technology and the different types of media such as television, cinema, videos, etc. in this new era that is governed by visual means of technology. All of that resulted in replacing the written form that used to stimulate readers' emotions with a visual medium that is now vastly dominant⁽⁴⁾.

This means that we are facing a new reality whether we like it or not. These days we need to focus on the value of a visual image in various fields whether it was still or moving. In order to achieve that, we must become acquainted with the mechanisms that are employed in the analysis of the reception of visual images, as well as the receiver's perception of that visual image and its effects in various aspects. On the other hand, we must also become acquainted with the perceptual analysis of a moving image, and its psychological, semiotic (the science of linguistic signals) ⁽⁵⁾ and artistic connotations.

The researcher conducted this study by reviewing previous studies in the same field, as well as relying on the content analysis methodology which is used by a great number of universities in the world in keeping track of the interests and activities of those who are engaged in scientific studies in order to keep up with the changes and developments of research.

II-The research problem:

Some of the issues found throughout the research are the multiple perceptions of images in social and cultural contexts, the differences found in receiving images of diverse visual contexts, as well as the various methodologies used in conducting the study. All of this makes it necessary to track the activities and findings of those who worked in the same field and to define the similarities and differences according to the different methodologies.

III-The importance of the research:

This research is a pioneer in the field of studying and analyzing the content of an optical image. Not only does it shed light on previous studies, but it also uses all of the previous findings by comparing them to each other in the quest of finding and understanding all of their similarities and differences.

IV-Research objectives:

The objectives of the research are the following:

1. To analyze different studies that look into studying the content of an optical image and how these studies were perceived.
2. To clarify the different methodologies used in studying the content of an image.
3. To compare the different methodologies used in examining the content of an image and to identify the common and different points among them.

V- The research hypothesis:

The research aims at providing an objective, systematic, and qualitative insight to the content of previous academic studies available to the researcher in a critical context in order to transfer application to theory. This is meant to evaluate the theoretical and methodological assumptions and to reveal the similarities in the basis of the set assumptions.

(1) Samer Anwar AlShamali: The Visual Culture and its Impact on our Lifestyle, June 2009, (p. 69).

(2) Inacio Ramona, The Image and the Tyranny of Connection, Syria, The Syrian General Committee of Publications, 2009, (p. 37).

(3) Hatem Saker: The New Optical Image, The International Intellectual Symposium, and the Dilemma of the Corresponding Current Art, Qatar 11-13 November 2008.

(4) Susan Sontag: Image Dimensions, Cairo, The Art of Translation and Publishing, 2009, (p. 11).

(5) Gill, Deleuze, Time-Image, Syria, the General Organization of Cinema (Seventh Art 29), 1999, (p. 343).

VI- The research sample:

The research sample included three previous studies in the field of moving and still images.

VII- The research methodology:

The research relied upon the descriptive approach in analyzing the content of the three previous studies and evaluating their results in light of the scientific methods used in each one of them.

VIII- Research terminology:

1.The definition of an image.

Linguistic definition:

In the Arabic language, the word "picture" means the forms and characteristics of a matter or an action. According to Lisan Al Arab Dictionary, it could also bear the meaning of “the reality of the thing and its form”. When we say the characteristic of an action is such and such that means its body and its image⁽¹⁾.

In English however, the word image came from the Greek, *Icon*, referring to symmetry and similarity. The word then transferred to the Latin, *Imago*, and to the English and French word, image, with a slight difference in pronunciation⁽²⁾.

Idiomatic definition:

In terms of the idiomatic meaning, the Larousse and Robert dictionaries agree that an image is a reproduction of something by drawing, sculpture or other means. This also refers to the mental image associated with a representation.

What concerns the researcher in this regard is the definition given by Algirdas Julien Greimas who is the author of the French Rational Theory of Language Dictionary he says “an image is all that it shows” and this definition is common in Semiology, more specifically its visual aspect which focuses on the image as its theme.

1. Configuration.

Configuration is the order of influential elements in a coherent unit with a coherent entity⁽³⁾.

2. Anthology.

Anthology refers to selections, extracts or literary pieces.

3. Codes.

It is a repertoire containing a sum of units that a speaker chooses from in order to make up a message.

4. Empirical.

It is a philosophical orientation that asserts that the whole of human knowledge comes from senses and experience, while denying the existence of intuition or any previous knowledge of practical experience.

5. The Gestalt theory.

It is one of several competing schools of thought that have emerged in the first decade of the 20th century as a protest against the intellectual conditions represented by the mechanical theories prevailing during that period of time.

(1) Ibn Manthour, Lisan Al Arab Dictionary, Beirut, Ala'ma Foundation of publications.2005, p (2259)

(2) Abdul Majid al-Abed, The Role of Visual Images in the Educational Dewan Al Arab, (electronic magazine) <http://www.diwanalarab.com/spip.php? Article20076>, 31, October, 2009.

(3) Joseph Machella, the configuration in the cinematic image, the Egyptian Book Organization. 1983, (p. 23).

6. Perception.

It is the process of selecting, organizing, and interpreting the sensory data in the form of usable mental perceptions ⁽¹⁾. It is also the process that we use in order to recognize and give meaning to different sensations in the outside world.

Perception is also defined in the Arabic encyclopedia as the direct testing of surroundings via the senses; while in another definition it is the process that the brain conducts using background knowledge in order to identify the indications of sensory data ⁽²⁾, for perception is the point where reality meets knowledge ⁽³⁾.

IX- Research Content.

1) (The Theoretical Framework)

1. 1 The Technical Basis of Image Formation.
1. 2 The Rules of Image Composition.
1. 3 The Language of an Image.

2) (Image Perception)

2. 1 The Visual Perception of an Image.
2. 2 Defining the Concept of Visual Perception.
2. 3 The Mechanisms of Image Recognition.
2. 4 Recognizing an Image Physiologically.
 - A. The Mechanisms of Sight.
 - B. The Terms of Seeing Visual Images.
 - C. The Analysis of Visual Images.

2. 5 Perceiving the Image Psychologically.

- A. The Visual Mechanisms of Perceiving Shapes and Objects.
- B. The Most Prominent Theories of Psychology in the Interpretation of the Visual Perception of Images.
- C. The Semiotic Connotations of an Image.

3) (Analysis and Evaluation)

3. 1 The results of conducting the content analysis methodology on previous studies.

(1) Al-Homsi, Antoine: perception: 1st edition, 1 mg, Damascus, Arabic Encyclopedia, 1998, (p. 697-698).

(2) AbdulHamid, Mohammed, and Mr. Bahnasi: The Effects of a Press Photo in Theory and Practice: 1st ed. Cairo. The world of books.2004, (p. 17).

(3) AbdulHamid, Mohammed, and Mr. Bahnasi: The Effects of a Press Photo in Theory and Practice: 1st ed. Cairo. The world of books.2004, (p. 17).

1. The Theoretical Framework:

1. 1 The Technical Basis of Image Formation.

“A good configuration of an image, such as any work of art, cannot be confined to one absolute arrangement or formula since the subjects and the tastes may vary”⁽¹⁾. On the other hand, an image is subject to a set of formative and expressive factors that set the scientific and academic framework for its composition. However, this does not mean that the rules are rigid, non-adaptable or adjustable; they actually serve primarily as a reference to the technical foundations that an artist adheres to so that his work is academic, creative, artistic and holds expressive values. These are the aspects that determine the composition's features and the significance of its artistic diversity without making it an individual work that is subject to various moods and individual views, for it is in the end a science that is governed by rules and assets. “This overall divergence is due to the diversity of each artist’s vision and their choice of angles as well as the structuring of elements which finally constitutes different outcomes. One artist may create a balance between the elements of a picture, putting everything in its natural place, and causing harmony between units, while another artist may tend to break the rules of aesthetic composition by producing a new contrasting view. The result is that both will form a distinct and authentic piece of art”⁽²⁾.

To illustrate this, we will discuss the composition of an image since it is the cause of its success, its rules of composition, and language.

1. 2 The Rules of Image Composition.

The technical foundations for the formation of all types of images (Still and moving, including cinema and television, etc.) are common. “An artist uses these foundations in arranging the elements, such as the lines, shapes, sizes, areas, spaces, colors, and textures that lead us to a visual design bearing a specific meaning. The reciprocal relationship of different elements on a flat surface achieves various artistic values”⁽³⁾ The aesthetic goal is one of the main objectives which an artist tries to achieve in a way that portrays the functional purpose of an authentic and unique piece of art. There are multiple ways to achieve these fundamentals of design in order to deliver an intellectual and aesthetic message by forming a visual image.

“Since the image is a human production, it represents a selected, composed, and refined vision of nature. Put simply; it portrays the aesthetic vision, not a replica of nature.”⁽¹⁾ “Its success relies upon complying with the configuration rules of a moving image, regardless of the reasons that push away from dealing with the technical configuration”⁽²⁾. The rules are;

- (1) Choosing from the perceived reality.
- (2) Using image composing elements.
- (3) Organizing them in a regular format that produces a specific indication.⁽³⁾

(1) Joseph Machelli, The Configuration of a Cinematic Image, the Egyptian Book Committee 1983, p (6).

(2) Mohammed Nabhan Sweilem, photography and life: Kuwait, the world of knowledge, the National Council for Culture and the Arts, 1984, (p. 84)

(3) Ahmed Jalaluddin Bilal: The Fine Photographic Image and its Relation to the Modern Schools of Fine Art: (An unpublished masters thesis) Halwan University, College of Applied Arts, Department of Photography, Film and Television. 2002, (p. 103).

The Language of an Image.

Despite the compatibility between the principles and rules of image composition, the artist focuses on two very important visual effects; first, controlling the image's depth of field in order to achieve a third dimension. Second, highlighting the axis of time in an image using different photography speed techniques according to the nature of movement in the scene in order to achieve a specific purpose.

Additionally, a moving image is usually accompanied by sound, especially in movies and television. Consequently, the language of a moving image can be defined by reflecting the cinematic definition upon it. **"The cinema is an audio-visual art that uses the following elements from a visual aspect: the different sizes of shots, the horizontal and vertical movement of the camera, the 'mise-en-scène' (The movement of actors in a scene), lighting, composition, decoration, place of filming, and montage (The sequence of footage in time, volume, and rhythm). As for the audio aspect, the cinema uses special live and public effects, as well as music. All of these sound elements are used either in correspondence or contradistinction."** From this, we conclude that the cinematic language is the language used in cinematic drama and television ⁽⁴⁾.

2. Image Perception.

2.1 The Visual Perception of an Image.

"What the eye perceives is not reality itself, but knowledge of that reality" ⁽¹⁾. This statement sums up the idea of image perception, as images are not reality itself, but a replica of reality. "Images exist to portray the world in a way that is less perfect than it originally is, therefore, they are allowed to slightly shift from reality as they can never imitate it perfectly" ⁽²⁾. However, the world is subjective in itself and does not exist in the way in which it is captured in its whole or details. The eye sees through the cultural media, imagination and beliefs. **"The eye sees what it wants to see instead of what is actually there in front of it"** ⁽³⁾ The eye is also dominated by the fragility of vision itself including cases of sickness and weariness. Based on that, visual perception is all about an attempt to identify the depicted worlds by separating what belongs to the imagination's ability of stimulating real life images, and what belongs to the experience of perception.

(1) Marcel Martin, Cinematic Language and Image Composition, Syria, the Ministry of Culture Publications, The General Organization of Cinemas (Seventh Art 164), 2009, (p. 22).

(2) Akil Yusuf Mehdi, The Artistic and Aesthetic Relationship between the Snapshot and Configuration, Al Mada newspaper. <http://almadapaper.net/sub/09-484/p14.htm>.

(3) Salah Fadel, Reading Images and the methods of reading: Cairo, Dar Al Shorouq for publishing, 1997, (p. 6).

(4) Haitham Hakki: Between cinema and television, Damascus, Dar Al Jundi for Publishing and Distribution, 1998, (p. 34).

(1) Sa'eed Pinkard: The image, between the Allusion of Reproduction and the Depiction of Sight, (Article) <http://saidbengrad.free.fr/ar/image.htm>.

(2) Guy Gotti, Trying to Identify the Marks of a Still Image, (journal), Morocco, Issue 5.1996.

(3) Sa'eed Pinkard: The image, between the Allusion of Reproduction and the Depiction of Sight, (Article) <http://saidbengrad.free.fr/ar/image.htm>.

The possible worlds as cultural constructs draw their images from a visible reality. Nonetheless, they shift from it through additions, deletions and modifications. For example, “an elf has the physical structure of a human being, though an elf has a tail and a set of horns just like in fairytales that we came across during our childhood”. The perception of an image also requires the merging of several disciplines such as sociology, psychology, aesthetics, history of thought, and anthropology.....and others.

In conclusion, each person perceives an image differently than others, and in order to understand that perception, we will first define perception and then the stages of visual perception, and finally examine the semiotics, psychological, and physiological aspects of it.

2. 2 Defining the Concept of Visual Perception.

To begin with, we must understand the difference between a moving and still image. A still visual image consists of fixed components within one framework that includes the technical, psychological, and semiotic values that it has. However, a **moving** image consists of a group of still visual images that form in their totality a moving image. A moving image is estimated to have 24 still images per second ⁽¹⁾ making it one of the most complicated types of visual images. Those who work on the compilation of moving images have to edit separate frames, and deal with each frame as an integrated work of art and moreover, to take into account all of the technical, psychological and semiotic aspects of that specific image.

In our present day, characterized by rapid technological progress, "the still image occupies less status than the animated/moving image. We can tell by its name (still image) that it lacks progress, but that it is also constant and stable. However, stability is not a valued quality in this era, **unless there was a movement in return**⁽²⁾. "All of this emphasizes the importance of a moving image in the fields of advertising and media which is due to its persuasiveness of expression and its association with the sense of sight, which is the major human sense. This was confirmed by the scientific symposium held in Paris in 1988 bearing the title (The Eye's and the Brain's Response to Watching Television). The symposium confirmed that vision accounts for the majority of the brain's cognitive activities. 80% of the information evident in our brains is visually perceived while the rest is significantly affected by vision⁽³⁾. It should also be noted that the world which we perceive is static. For example, if you stand by the window, the picture that is reflected in your retina is rectangular. However, if you moved to a particular side, the picture becomes trapezoidal. Despite the changes in the retinal perception, the eye continues to perceive the window vertically since its basis of recognition is still the same (it is still a window)⁽⁴⁾.

(1) Baghdad Ahmed Blyeh, Image Semiotics (Articles about the recipient's relationship to theater, film and television), Dar al-Adeeb.2008, (p. 66).

(2) Guy Gotti, Trying to Identify the Marks of a Still Image, (journal), Morocco, Issue 5.1996.

(3) Mohsen A'mar, Television Publicity; A reading in meaning and significance, (magazine), Morocco, Issue 18.2004, (p. 103)

(4) Leila Khalil Dawoud, The Visual Perception of Virtual Movement (an experimental study of self-movement), (unpublished doctoral thesis), Ain Shams University, the Women's College, Psychology Department, 1976, (p. 1).

2.3 The Mechanisms of Image Recognition.

A human being "understands the outside world in order to adapt to it through his/her daily life, therefore perception is vital to his/her biological functions⁽¹⁾." More specifically, visual perception is the most vital sense because today we live in the era of pictures and as the Chinese proverb goes, "a picture is worth a thousand words." However, these days a picture is worth a million words.

Images form a strong link with media, education, ethics, imagination and creativity and since the world of images is a rich, multi-dimensional world, it has both positive and negative effects⁽²⁾. Animated pictures are now one of the most important means of media and advertising. Its access everywhere (in our houses, restaurants, in the streets, etc.) makes it our accompanied guest and we are powerless to its direct and indirect effects.

The basis for the process of perception is thinking. The human mind takes separate shots from here and there and then stores these shots to summon them later and connect them to each other through clear ties. These steps characterize the process of perceiving the things we see in separate forms and then make these forms easier to identify⁽³⁾.

On the other hand, vision is considered an ineffective process that relies heavily on the brain and the natural, physical environment. The brain must erase a large amount of the information that reaches it and only selects what is necessary by comparing its processed data with what it has in store in order to gain knowledge from the visual world. Thus, this leads to the de-synchronization of vision as color which is seen prior to shape, and shape is seen prior to movement, and all of this information reaches the brain in a constant flow. A face may be classified as sad and by that the brain provides knowledge of that sad person despite the viewing angle and the constant changes in their features. The brain may also be compelled to classify some things according to their color such as when we judge the ripeness of an edible fruit.

The brain therefore, uses the ever-changing information that reaches it by extracting only what is necessary to recognize the main features of what it perceives. It accomplishes that by extracting fixed features for the classification of data⁽⁴⁾.

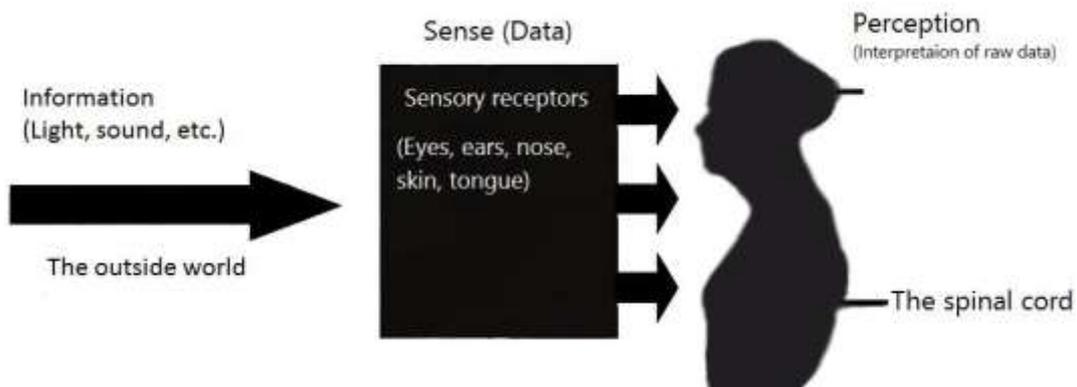
The process of perception happens by stimulating the different senses such as (hearing sounds, seeing shapes, touching objects, tasting foods, smelling scents, etc.) and on the other hand, it works by simultaneously rectifying visual images, reducing, intensifying or excluding complex or inappropriate information, diverting memory or changing it, and finally identifying patterns and forms. The brain achieves all of that by learning and expanding its borders through symmetry.

(2) Zaid bin Mohammed Rummani, image technology, Al Jazeera electronic newspaper, No. 155, April 26, 2006

(3) Khairallah Ibrahim Khairallah, The visual reading and the perceptual analysis of the content of movie scenery, (Research), Egypt, the Arab School of Film and Television, 2004.

(3) Sameer Zaki, What is the Relationship between Art and the Visual Brain? (World Culture)
<http://www.balagh.com/thaqafa/3v0pkycr.htm>.

(Figure 1) The stages of the processes of perception and sensation.



Shakir Abdul Hamid, *The Pros and Cons of the Era of Images*, The National Council for Culture, Arts and Literature .2005, (p. 59).

An image is often characterized by ambiguity as it often carries multiple meanings. In addition to that, the message that it carries cannot be decoded immediately which may lead to confusion. Contrary to that, we find that a spoken message is able to achieve a meaning that is void of confusion. However, this ambiguity in the visual message is often more of an advantage than a drawback as it makes images rich in meanings and indications. This is achieved through the complex combination of its physiological, psychological, and semiotic components.

2-4 (Recognizing an Image Physiologically)

Our vision of the things that surround us during our daily activities, learning, watching TV and movies, relies on the sense of sight. Therefore, the process of recognizing an image first starts at a physiological level, which is basically the function of the eye. Some recent studies have indicated that the components of the visual process are as follows: (one tenth) of it relates to the physical aspect, while the other (nine-tenths) of the components are mental in nature and have to do with internal sentiments.

During the visual perception process, the eye receives the sensory input in the form of patterns bearing a specific meaning. The process of interpreting these images relies upon the person's mental, physical and emotional states, level of intelligence, age, previous experience, features of personality, among other aspects as well⁽¹⁾. Below, we will discuss various aspects of the process of seeing, its mechanisms, terms of vision, and the process of analyzing the visual information.

A. The Mechanisms of Sight:

The eye resembles the photocopy machine in two ways. **The first** way is that the image is captured in the eye, sent to the brain, and is instilled in it. As is the case with the photocopy machine; printing images on a special plate. However, the brain is slow in doing so as it keeps the image after the disappearance of the scene⁽²⁾. **The second** way is that both the photocopy machine and the human eye rely on their sensitivity to light in order to perceive things more accurately. First, the light rays pass through the cornea, which is the transparent cover that goes around the outer part of the lens. Then, the light passes through the lens which

focuses it on a special area of the surface of the retina called the macular. The macular represents the most sensitive part of the retina, or is the center of clear vision. Finally, the image is reflected upside down on the retina as the pupil either expands or narrows depending on the appropriate amount of light that it is being exposed to ⁽³⁾. (figure 2)

B. The Terms of Seeing Visual Images:

Vision does not solely rely on the retina. The retina is merely one episode of a series of events necessary for perception. Without the basic visual conditions, and some certain functional characteristics of visual acts, perception wouldn't have been possible.

Some of the most important visual characteristics are the following;

1. The concordance between the retinal image and the physical object:

If it were not for the picture being a regular basis representative of some of the physical attributes of objects, then the existence of a constant visual world would have been impossible. The retinal image does not only keep the spatial relationships of the physical objects, but also their outer edges, and the relations between parts of the object.

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2. The law of visual distance:

This law states that the size of the retinal image is inversely proportional to the distance between the eye and the object. However, this does not mean that everything we see is set in line with this law. As we will see later on, a marked change may occur in the distance between an object and the eye without remarkable changes on the perceived size.

3. The analytical ability of the visual system:

When the eye focuses on two surrounding things, two separate retinal images are formed. If it wasn't for the visual system's ability to maintain this analysis, we wouldn't have been able to perceive two things and realize the relationship between them at the same time. Our visual world would have been a vague mixture of images ⁽¹⁾.

C. The Analysis of Visual Images:

The American scientist Roger Sperry and his colleagues conducted experiments on some patients who underwent surgeries where some of the neurotransmitters in their eyes had to be cut. Sperry introduced chimerical faces that is, unreal or fictitious, to the patients. The images combined the left side of a woman's face and the right side of a man's face to create one face (Figure3) and the patients hadn't realized anything unusual about the fractured faces. When they were asked to describe them, they all saw a man's face which means that all of the patients described the images based on the information addressed in the left side of the brain. All of that resulted in the fact that the right side of the brain is the one responsible for the basic processing of visual information.

(1) Shakir Abdul Hamid, visual arts and the geniality of perception, Cairo, Dar Al'ain Publishing, 2007, (p. 43).

(2) Shakir Abdul Hamid, The Pros and Cons of the Era of Images, The National Council for Culture, Arts and Literature. 2005, (p.43-44)

(3) Joseph and Barbara Anderson: The Myth of Persistence of Vision Revisited Journal Film and Video, Vol. 45, No. 1 (Spring 1993).

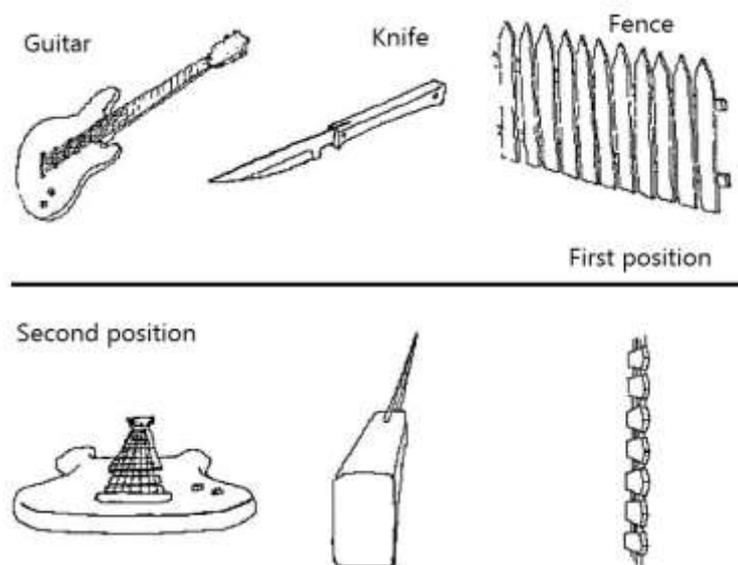
2-5 Perception of the Image Psychologically:

The psychological understanding of a visual image relies mainly on our way of grasping it and perceiving its components in terms of its artistic composition as well as its psychological and semiotic content. This enables us to understand one image easily and another with more complexity. Therefore, “a moving image relies upon the logic of creating, reinstalling, and synchronizing events according to daily and casual logic in order to handle its essence. Moreover, a moving image is much like a synthetic image for it does not have a memory and it is attached to its basis to the extent that it is erased”⁽¹⁾.

“A moving image also has a double structure; one that is appointed by the photographer’s eye and his tools, where each image regulates its own elements of size, color, and shape as well as the angle from which it was captured. And another structure that is carried out by the receiver as each receiver perceives the image according to his/her history, hopes, and dreams”⁽²⁾.

As we see in (figure 4), the shape of the objects in their first position is different than that in the second position even though they are still the same entities but taken from different angles.

(figure 4) Example to changes of the viewing angle.



Stephen M. Kosslyn & other: Neural Systems Shared by Visual Imagery and Visual Perception: A Positron Emission Tomography Study, ARTICLE NO. NI970295NEUROIMAGE 6, 320–334, April 9, 1997, P (324).

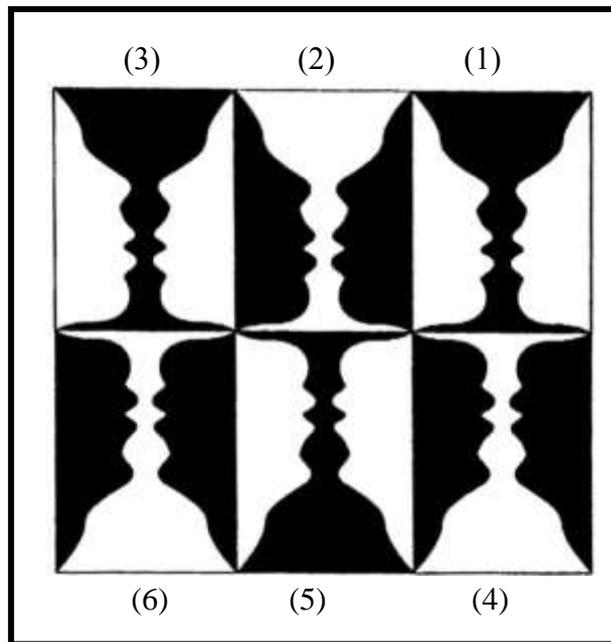
It is also not possible to talk about our perception of the image without combining the cognitive and mental images as the transition between them both is beyond perception. “The mental image often depends on the sensory images captured by the eye, reduced in the depths of the memory, and translated then turned into a mental image⁽¹⁾” This prompted a Chinese emperor to order one of the greatest painters in his palace to wipe out a mural he drew of a waterfall claiming that the purl of the water was preventing him from sleeping.

(1) Fareed Alzahi, What is Behind the Concepts of Image Appeal and Authority (magazine), Morocco, No. 18.2004, p (6).

(2) Sa’eed Pinkard, The Public Consignment of Generation and Interpretation, (journal), Morocco, Issue 5.1996.

The direction of our focus point is also one factor that affects our perception of the image. What we see in (figure 5) is six recurrent forms of the same picture. However, the distinguishing factor to each of them is the change in the color of the background as well as the form. Therefore, we can see a rotation in the black background with the white objects and vice versa, as well as reverse shapes that are upside-down. For example, when we focus on the black side in image 1, we perceive a cup, however when our focus point is turned towards the white sides, we perceive two faces opposing each other. Bearing in mind that we can never focus on the two colors together at the same time, even if that happens we wouldn't be able to perceive the form unless we focused on one color only. The same goes for the rest of the five shapes.

(Figure 5) Examples of the focus points in images.

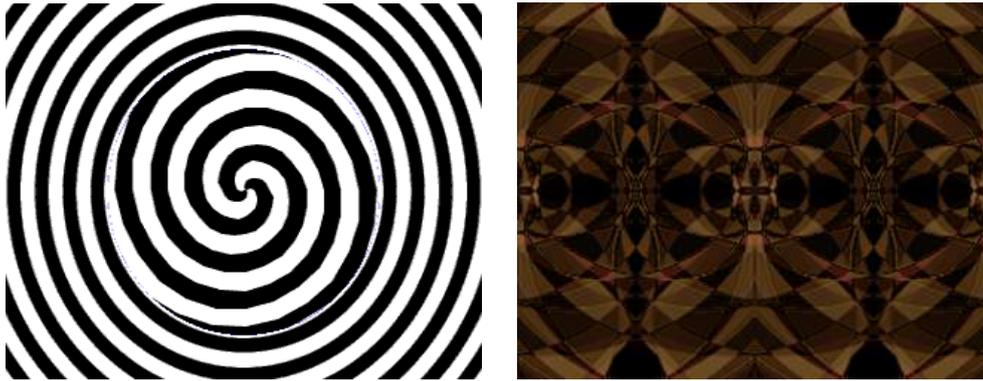


Nicholas Wide, *Optical illusions as an art and a science*, Baghdad, Dar Alma'moun for publishing, 1988, (p. 34).

On the other hand, since moving images are in fact a group of still images that are recorded as consecutive, the eye holds onto the image even after its disappearance until the viewing of the following image ⁽¹⁾. An example of that is provided in (figure 6) when you look at the spiral shape steadily for 20 seconds and then shift towards the following image, you will notice that the spiral movement is reflected on the still image and this is known as the illusion of movement.

(1) Fareed Alzahi, What is Behind the Concepts of Image Appeal and Authority (magazine), Morocco, No. 18.2004, p

(Figure 6) An example of the illusion of movement.



Note: You must stare at the spiral shape for about 20 seconds, then move towards the following image.

Rod Munday, *The Moving Image*, Lectures: Visual Perception (8).

<http://www.aber.ac.uk/media/Modules/MC10220/visper08.htm>

Finally, our visual perception of the things we see is deeply associated to our psychological state. Whether we are happy, sad, worried, etc., it's reflected in our perception, our way of thinking, and our previous experiences. This means that our realization of the psychological aspect is connected to our perception and understanding of the different objects and shapes that we observe in an image. This was explained and emphasized by multiple psychological theories. On the other hand, scientists of aesthetics tried to analyze the semiotic indications of an image. This made things a little bit more complicated and more details were required, therefore, they ended up addressing the following items;

A. The Visual Mechanisms of Perceiving Shapes and Objects

B. The Most Prominent Theories of Psychology in the Interpretation of the Visual Perception of Images.

C. The Semiotic Connotations of an Image.

A. The Visual Mechanisms of Perceiving Shapes and Objects.

A visual image is nothing but iconic evidence that reminds us that there is some kind of similarity between the external characteristics of the signifier and the signified. The visual image carries in its content a number of characteristics that refer to a specific object such as its measurements, color, and dimensions. Those characteristics correspond closely with the receiver's perception which is defined by diverse and variable historical, cultural, and social aspects⁽¹⁾.

The sensory input that a human receives enters their consciousness as sizes, patterns and forms. Our brains do not perceive the surrounding environment as splashes of color, variations of brightness, or different volumes of sound but as houses, walls, trees, cars honking, feet stomping and words. Moreover, our cognitive world is characterized by a high degree of stability. For example, the height of a man does not change whether he was close or far away from us, a plate does not seem circular from one angle and elliptical from another⁽²⁾.

Our understanding and perception of objects in terms of simplicity or complexity depends on two major factors. These factors are:

(1) J Rod Munday, *The Moving Image*, Lectures: Visual Perception (8).

<http://www.aber.ac.uk/media/Modules/MC10220/visper08.htm>.

- The degree that the viewer is accustomed to seeing the object
- The amount of visual information that the object provides the viewer with ⁽³⁾.

To illustrate this, we note the form (Figure 7) that we perceive the upper and lower parts quicker than we do with the one in the middle since it is more complex and filled with overlapping lines.

The factors that influence the complexity of an object's appearance include:

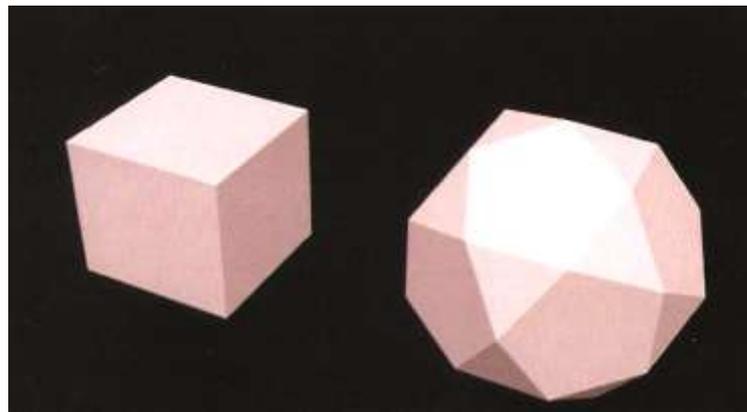
1. The number of external surfaces belonging to the object.
2. The number of shapes constituting the object, if it was composed of several shapes.
3. The degree of complexity of the object's components.
4. The linking manner of the shapes forming the object ⁽⁴⁾. Illustrated in (Figure 8)
- 5.

(Figure 7): Visually reading the image of the building.



Mohammed Hussein Ibrahim, *The Visual Reality of the Buildings Classified according to their Exterior Appearance*, Riyadh, Hala Press, 2008, (p. 27).

(Figure 8): An example of the amount of visual information evident in an object.



Mohammed Hussein Ibrahim, *The Visual Reality of the Buildings Classified according to their Exterior Appearance*, Riyadh, Hala Press, 2008, (p. 28).

(1) Salwa al-Najjar, The influence of an Indicative Image, (magazine), Morocco, No. 25, 2006, (p. 94).
 (2) Al-Homs, Antoine: perception: 1st edition, 1 mg, Damascus, Arabic Encyclopedia, 1998, (p. 696-698).
 (3) Mohammed Hussein Ibrahim, *The Visual Reality of the Buildings Classified according to their Exterior Appearance*, Riyadh, Hala Press, 2008, (p. 27).
 (4) Mohammed Hussein Ibrahim, *The Visual Reality of the Buildings Classified according to their Exterior Appearance*, Riyadh, Hala Press, 2008, (p. 29).

B. The Most Prominent Theories of Psychology in the Interpretation of the Visual Perception of Images.

The image is a means of communication that conveys the message to the recipient with minimal distortions or errors. If we compare still and moving images in accordance with modern communication theories, we would find that the image is beyond the limits of disruption or deformation. There is no way that allows us to change the expressions of photographed people, as it is equally difficult to introduce new elements or add extra modules. If that ever happens, it would afford the image more than its ability to transfer information as well as reduce its impact immediately once the effect is revealed⁽¹⁾.

The following are the most prominent theories attempting to explain the concept of perception and the scientist J-D Bagot compiled them in a list of 7 theories:

1. The structuralist and empirical theory.

Perception was mainly considered a result of the collection of numerous basic sensations as it was initially based on the structuring of these correlations (structuralism), as well as the essential role of experiments and learning (empiricism). Therefore, the empiricists were strongly opposing those who have a tendency of portraying cognitive abilities as being innate. At the present time, the question of what is innate and what is acquired is still in perception. However, there is a shift towards identifying periods of growth in which cognitive abilities seem more complicated.

2. The behavioral theory.

The behavioral theory stands on the principle that mental states and mental activity are incapable of being studied objectively, and that we can interpret the psychological phenomena from the reflected behaviors of the pattern (sense-response).

Behavioralism had a huge impact in the field of education as well as the perception that individuals are black boxes and their feelings were nothing but a result of the environmental stimuli that is formed in the shape of objective relationships.

3. The gestalt theory.

Unfortunately, the main underlying concept in the gestalt theory can't be accurately translated to either English or Arabic. Therefore, the German word survived. The word bears multiple meanings including the formula, the shape, body, form, pattern, structure, regulated, transcendent, as well as organized⁽²⁾.

Even though Gestalts call for the portrayal of some of the structural elements evident in the stimuli, their main concern is how observers perceive the world and the style of visualizations that they build. It is essentially an analysis that re-organizes the incoming information according to a set criteria from top to bottom. On the other hand, Gestalts have expressed their opposition to the analysis that is based on retailing the subject to several elements as they insist on the importance of influential elements in the process of perception. This analysis is referred to as the bottom to top analysis. Gestalts also introduced five rules for image perception:

(1) Mohammed Nabhan Sweilem, *Photography and Life: Kuwait, The World of Knowledge*, the National Council for Culture and Arts, 1984, (p. 103).

(2) Mustafa Nassif, *Learning Theories; Comparative Study: Kuwait, The World of Knowledge (70)*, The National Council for Culture and Arts, 1983, (p. 203-204).

- The difference law: Different or odd shapes are better highlighted.
- The simplicity law: Simple forms are better highlighted than complex ones.
- The smallness law: Small shapes show up on more depth than bigger shapes.
- The regularity law: The organized partitioning of forms affects the cognitive process.
- The juxtaposition law: The contrastive division of elements of a certain shape affects the cognitive process.

4. The formative theory.

In the field of visual perception, this theory stressed the key role of eye movement in gathering data from several sources in order to build a mental map depicting scenes and viewed topics. This approach is consistent with some of the current neuro-physiological concepts that favor the idea of the correlations between the neural networks being the physiological cornerstone of cognitive perceptions.

Finally, any approach is described as being formative if it assumed perception being a result of a construction conducted by the individual based on data derived from the observation of an active stimuli.

5. The Ecological theory.

In the field of visual perception, the ecological theory relies on the principle that all the data necessary for perception is evident in the surrounding world. The role played by a moving organism (the one who observes) is fundamental. According to Gibson, what enters the eye is a (peripheral optical flow) which means a spatial arrangement of the constructed light by various elements of the surrounding environment. This network is divided into a large number of sectors (solid angles) and each sector has the light reflected in a special spectral formation from the surface of the elements existing in its space. Therefore, perception is immediately set according to this visual arrangement and the changes made through the moving organism. This has stressed the fact that possibilities for experimentation must be discerned within the environment, the reason why it was named ecological, while denying the credibility of laboratory experiments where people sit still with focused vision in positions unlike real life conditions.

6. The transactional or interactive theory.

This theory depicts perception as an interactive process between the individual and the surrounding environment. Unlike the gestalt and the ecological theories, this theory considers the reliance on the structural elements evident in the stimuli as well as the general environment insufficient. As the perceiving individuals see the world that they dwell in according to their own point of view, as well as their past experiences and the goal that they wish to accomplish with their cognitive choice.

Perception is a continuous, unconscious process to various assumptions about the surrounding environment. The preference of one of these assumptions makes it conscious. Perception therefore requires many personal factors in determining this choice bearing in mind that when the data is unfamiliar, the perceiver tends to choose the assumptions that are more suitable for the situation.

7. The cognitive theory.

The cognitive theory views perception as the outcome of several mental processes that allow giving an indication of what enters the body through the senses. The cognitive approach is mainly based on analyzing information which considers perception as being dividable into several stages, as each stage is a specific process in itself. This doesn't mean that the stages are sequential as some of them are concurrent while others are not necessarily active.

As a start, cognitive theory followers try to identify the various processing stages. After that, they try to determine the nature and characteristics of these processors by clarifying the form that the information is presented in through each stage. Finally they highlight the indicative rules for the uses of each and every form of mental perception.

The procedure of processing associated with the characteristics of the stimulus is referred to as the "Emerging Processes" and this is what is observed in the early stages of cognitive processing. When the data comes directly from the stimulus, it becomes mechanic and is referred to as (processes directed by the stimulus). However, the processes in the more cognitive levels are controlled as they are connected to a person's previous knowledge, expectations, motives, and previous cognitive resolutions. This is referred to as "the processes directed by concepts" or as "the falling processes". These processes mainly intervene with the level of interpretation; however, they could also affect the emerging processes.

C. The Semiotic Connotations of an Image

The semiotic connotations constitute the most prominent feature of an image whether it is moving or still. Therefore, we can consider the image as a signal i.e. a tool that's function lies in the transferring of messages. This presupposes the existence of methods that produce these messages. The decoding of messages requires certain methods for without these methods, progress in image interpretation will not be made ⁽¹⁾.

The moving image has achieved a high accuracy level to a point where now it is able to express feelings such as longing, or even portray the beliefs that are evident in a person's conscience. The moving image is now also accompanied with movements, sounds, music, and limitless technical tricks. All of that has granted it the power to address audiences from different places and languages using various cultural methods that are suitable to their different abilities. Therefore, a moving image has surpassed the barriers of illiteracy, ignorance, distance, and time. All of these reasons among others made moving images the most important and appreciated means of mass communication between people.

Many researchers in the audiovisual field were led to consider images as grammatical and linguistic systems just as words in linguistic structures. As long as images are the precise result of visual perception, then the representation of objects inside these images leads to an ontological conversion of materialistic substances which are eventually presented in the form of signs. This means that images are considered as elements within semiotic formats manifested in visual perception ⁽²⁾.

This leads us to the clarifying of a false misconception which states that images are accessible to all people and that they are perceived almost immediately. However, images are not a simple reflection of reality that is read directly. Instead, they impose cognitive efforts, as well as an interpretation that is not compatible with the common means of perception.

On the other hand, there is another feature for images; that is, it works according to its own iconic paths as they are usually double coded. Therefore, in order to appreciate the true value of an image, we must absorb the greatest amount of

(1) Judith Lazar, The Picture, (Journal), Morocco, Issue 5.1996.

(2) Sa'eed Pinkard, The Public Consignment of Generation and Interpretation, (journal), Morocco, Issue 5.1996.

knowledge that intervenes with the construction of culture. Based on that, the true understanding of some visual messages assumes the existence of social and cultural balance as well as intellectual gains ⁽¹⁾

In order for us to be able to understand the semiotic connotations of a moving image we will look into the process of image analysis as well as the clarification of its meaning.

First, the analysis of the image:

The human perception of the outside world is not a simple process that is merely achieved by linking a perceiving consciousness and a perceived object in a direct relationship without a mediator. On the contrary, it is a very complex process, and there must be a two way distinction in the analysis of images.

- What is due to the perception (how to recognize the picture).
- What is due to the production of connotations (how is meaning evident in images).

These two different processes are not linked to the same issue which is to look into what makes images independent entities that possess their own ways of producing meaning. Based on that, the central issue in determining the nature of an image comes down to knowing the orientation by which this image comes to the eye and inhibits it as it is considered equivalent to the thing that it represents. The pure referral to a subject that is represented by an iconic stand suggests that the relationship between the signifier and the signified is one that is based on similarity which makes the former refer to the latter without a medium. In that case, the significance of an image is something that comes from the image itself without the referral to prior knowledge.

Identifying this structure constitutes a "magic key" in leading us to define the concept of the cognitive model. This model constitutes the basic knowledge that helps the perceiving consciousness in decoding most visual images and connecting them to the realistic experience that they portray. **Even though what we see is something actual and realistic, what flows into the mind is an idea of that thing and not the thing itself.** Based on that perceived vision, we can say that the methods governing the world of iconic signs are the same as those which govern the human experience as a whole.

Every attempt to recognize and identify the purpose and content of an iconic sign requires wide familiarity of previous knowledge open to multiple worlds. This is due to two reasons:

1. What the eye perceives is basically signs and not isolated objects, as the world is inhabited by signs instead of objects.
2. The iconic sign is not an indicator by itself. However, its inner meaning calls for the evoking of a cultural experience as a precondition for capturing the means of signification.

Based on that, we can say that these signs constitute a rule governed language. The indications which can be detected within the visual signs are implications that are of cultural nature. Also, previous methods are called for in the comprehending and interpreting of images ⁽¹⁾.

Second, the meaning of the image:

As previously mentioned, an image carries a set of visual indications that carry several meanings of a visual image in its content. Also, "the production of a certain indication through an image does not rely on the similarity that the signifier causes with what it refers

(1) Judith Lazar, The Picture, (Journal), Morocco, Issue 5.1996.

to." Moreover, the visual language, through which connotations are generated within an image, is a language of great composition and diversity.

The meaning evident in an image and in every expressive visual tool relies on previous knowledge. These are the indications granted by culture to several things, human bodies, and worlds of composition. It is about the acquired connotations that an image struggles to recover, through a diagnostic representation, from its original structure and incorporate it into other structure that grants it privacy and redeems it of its dimensions ⁽²⁾.

For example, when colors, shapes, and lines merge into a picture, they are loaded with their previous connotations. The existence of the red color in an image is manifested in its connotations as opposed to its physical presence among other colors. The same is true with the colors green, blue and white. What applies to colors also applies to geometric shapes (squares, triangles, rectangles or angles) for these shapes have connotations other than just being geometric configurations covering divided spaces of a boundless universe. These connotations enrich the iconic dimension and vary its implications.

3. Analysis and Evaluation.

3-1 (Critical Analysis of the Content of Previous Studies).

The researcher conducted his work by reviewing a range of research and studies on analyzing the content of images (still and moving). Then, he revised their results and criticism and compared the methodologies as well as the results to find the points of similarity and difference.

Literature Review.

1- Dr. Daniel Chandler MC10220 Reading the Visual.

In his research, Dr. Chandler displayed an image (Fig. 6) to a set of male and female viewers of different ages (14-35) years old. The study sample included 31 participants 7 of which were male, and 24 were female. The participating countries were divided into English speaking countries (U.S., England, New Zealand, and Australia) and European countries (Holland, Finland). Each of them was asked to provide their opinions in 1500 words about what they saw, who they saw, and what the people in the image were doing.

(Figure 9): The image adopted by Dr. Daniel Chandler in his research

The image portrays a young woman sitting in a bar crowded with tourists while a waiter is whispering to her. In the background, you can see bottles of wine and cups on shelves. The lighting is focused on both the waiter and the woman at the front and decreases in its brightness as you move towards the background.

(1) Sa'eed Pinkard, The Visual Representation between Perception and the Production of Meaning, (journal), Morocco, Issue 5.1996.

(2) Sa'eedPinkard: The image, between the Allusion of Reproduction and the Depiction of Sight, (Article) <http://saidbengrad.free.fr/ar/image.htm>.



Daniel Chandler, Reading the Visual MC10220, Essay 2, Tanja Nieminen, (05/05/2004).

The descriptions differed in some cases and were compatible in others. This was due to three main factors; the difference in the area of focus for each participant, their cultural differences, and their psychological and physiological states. Some opinions were:

- All of the participants showed interest in the clothing of the characters evident in the image. (The waiter, the woman, the man in the background).
- All of the participants were interested in what is going on between the waiter and the woman in the foreground of the scene as they represented the center of configuration of the image.
- Almost half of the participants were interested in the man in the background (Figure 10), others were not interested in him because they believed he doesn't contribute to the image, while a third party did not even notice him at all.
- Some participants showed interest in the body language throughout their analysis. They paid special attention to the intensity of the waiter's fist position on the bar surface. This gave them the idea that he is talking to the lady about something that is mysterious or dangerous (Figure 11).

(Figure 10) The man in the background



(Figure 11) The body language of the waiter



Daniel Chandler, Reading the Visual MC10220, Essay 2, Tanja Nieminen, (05/05/2004).

- The participants' observations about whether the waiter is also smoking or just the lady differed. This was due to their different experiences in life as in the image, only the woman is smoking, while in fact, a waiter wouldn't smoke while working.
- Some participants perceived that there is a relationship between the waiter and the lady because of how close he is to her and the way he is whispering in her ear as if he's telling her a secret. They believed that the man may be her lover or husband.
- Some participants believe that the scene belongs to the 1950s or 1960s and that the lady appears to be a housewife.
- Some participants were interested in the expressions of the characters in the following ways:
 - Some thought that the woman was going through some problems and that the man was trying to support her.
 - Others thought that the waiter represents something for the woman.
 - Many participants guessed the conversation that is taking place in the scene.
 - One of the participants pointed out that the appearance of lady was that of a businesswoman who just got out of work and is probably doing one of her daily activities.
 - While another participant pointed out the woman's elegant style and the pride that is portrayed in her character. This participant viewed her as a businesswoman who might be lonely.
 - Another participant believed that there was a vague attitude and a crime to be agreed upon between the waiter and the lady.
 - One participant paid special attention to the ring that the lady is wearing in her right hand which implies that she is married. This participant explained the woman's resorting to smoking as a reflection of her state of discomfort which might imply that she is having an affair with the waiter.
 - Another participant also perceived the woman as being married because of the wedding ring in her hand. This participant thinks that the woman looks miserable and is having an emotional problem. (Note: the culture of the participants coming from Europe, more specifically Holland is different than those coming from the east. For easterners, the wedding ring is worn on the left hand).
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(Figure12) The body language portraying the affair between the waiter and the lady



Daniel Chandler, Reading the Visual MC10220, Essay 2, Tanja Nieminen, (05/05/2004).

2- Dr. Khairallah Ibrahim Khairallah – The Visual Reading and the Analytic Perception of the Content of Cinematographic Scenery.

This study addresses the characteristics of a visual reading of a cinematographic scene and its effect on the process of the analytic perception of the content of an event. The researcher conducted the descriptive analytical approach in his work. The results were concluded as follows:

- An adequate visual reading of a cinematographic image needs focus while viewing because it is a complex neuro-mental process which is reflected in the level of interaction and cohabitation with the work and the degree of accepting its message.
- A correct visual reading of the elements composing light and color in a cinematographic image leads to the understanding of dramatic relationships, and the realizing of its content.
- The level of culture and previous background experience of the viewer affect his/her enjoyment in the graphical level of the image in terms of its form.
- The courses of art appreciation and picture animation in colleges and specialized art institutions need to refine students' skills in sound visual readings, and to practically train them on how to interpret still images, image formations, and moving images. This would be positively reflected on their various specialties, and it would also liven up their understanding of artwork and the rhetorical value of art.
- The importance of body language in expressing the cinematographic dramatic content which is positively reflected in the content of visual reading.

3- Dr. Nahla Issa Assaf (An unpublished PhD thesis) -The Effect of Using Visual Expressive Technology on the Content of Television Images, Examining a Sample of Arabic Satellite Channels

- The researcher conducted the qualitative, analytical, semiologic methodology in her research in order to describe the content of TV images in a sample including various TV shows and advertisements. Her research objectives were; first, to explore the relationship between technological development and the content of images in various shows, second, to analyze the homogeneity of human and technological signs according to the skills of the person initiating contact, and their understanding of the used technology.

The results connected to the subject of our research were as follows:

- One of the most important indications that the image of television reflected on the subject of our study was the fact that we cannot separate between what is human and what is technological in our modern era. According to the results of the study, the technological development has an undeniable effect on the social, cultural, and political circles as it even has the ability to integrate into the social system and control it.
- Most images in shows reflect cultural indications to the era of media and the celebrity world.
- The codes portrayed in television shows and advertisements in the research sample reflected an increasing tendency toward hidden advertising. This is conducted by introducing human models, fashion styles, and decorations that may end up becoming a trend. Thus, codes feed on other codes and the world of imagery becomes encrypted and subject to imitation.
- The codes portrayed in television shows and advertisements in the research sample reflected the customs, traditions, and cultures of other communities in a local cultural context.

Most of the religious and moral terms of reference were contradictory to the morals of our local communities. This led to the portrayal of an external culture and the marginalization of the local culture which means that the portrayed codes exercise the implementation of an alternative pattern to replace the local identity.

Literature Review Evaluation:

The analysis of previous studies:

Relying on the research methods conducted in each of the previous studies, we came to the following results

1. Dr. Daniel Chandler's research

By reviewing the research, we concluded the differences in the perception of the image that was presented to the public. There were viewers who focused on minor details that were not noticed by others and vice versa.

This emphasizes the link between the understanding and perceiving of an image with the psychological state of a person as well as their environment, culture, personal point of view, society, religion, and different terms of reference.

2. Dr. Khairallah Ibrahim Khairallah's research

The results of this study emphasized the interest in the elements of photo composition which are essential for the understanding of a moving image. These elements include light, color, and motion. The results also stressed the impact that the cultural level and the background experience of the viewers have on their enjoyment and understanding of the graphical form that the image portrays.

This study also emphasizes the need to focus on the composition of an image and the movement within its elements according to the distinguished principles of photo composition. This is used to guarantee that the image portrays the meaning as well as the educational, artistic, and semiotic indications that are required.

3. Dr. Nahla Assaf Issa's research

The study illustrated the nature of the relationship between technological development and the content of an image in various shows and advertising programs. This was through the connotations that a TV image reflected between what is technological and what is human in this modern era. The study also confirmed that most entertainment programs reflect the cultural indications of a media era (celebrity world) as it explained that the image relies on codes that the viewer solves and understands.

This reinforces the need to perceive an image by understanding the semiotic indications that abound it. This is achieved by relying on the prevailing cultural and social norms or the ones that have been implanted through the programs that may eventually lead to the replacing of the local and cultural identity.

The points of similarity and difference among previous research studies:

Relying on the analysis and evaluation of the above mentioned studies, we can summarize the points of similarity and difference among them as the following:

- 1) We noticed that all of the previous studies agreed on the artistic foundations, and the scientific and educational regulations of image formation.
- 2) The previous studies differed in their results, and that is due to the different ways and methodologies used to realize the content and the indications of images (both moving and still).
- 3) We noticed that the results of Dr. Daniel Chandler's research were detailed and important in the field of analyzing people and their understanding of image connotations. That is because the researcher relied on the direct questioning of the public's opinions about what they perceived in the image that he used which made it easier for them to express their views clearly and accurately. On the other hand, we also noticed that the results of the research focused on the psychological state relevant to the viewers' understanding and analysis of the image content.
- 4) The results of Dr. Khairallah Ibrahim Khairallah's research stressed the role that the intellectual and cultural level of the viewer's influences their understanding of the content and the indications of an image. In other words, those who are below certain scientific and cultural levels were not able to understand the connotations relevant to the content of an image.
- 5) The results of Dr. Nahla Assaf Issa's research confirmed the relationship between the codes and indications of a moving image with the current technological development and the vocabulary of modern life. It also focused on portraying the implicit message that the sender (the one who makes the message) seeks to convey to the viewer through expressive means of mass media.

Results and suggestions for further studies:

After studying the visual perception of an image's content (moving and still) by using multiple methodologies, in terms of understanding the rules and the foundations of photo composition, the mechanisms of sight, the picture's semiotic significance and meaning, and then analyzing and evaluating previous studies in the field of studying of the content of an image, we came to the following results and suggestions:

1. The indications determining the content of an image and its connotations are shared among moving and still images. That is because a moving image consists of a set of still images, taking into considerations the functional and technical differences that come along in accordance with the animated image type (TV, cinema).
2. The level of the viewer's culture and his previous expertise affect the way he understands the connotations of an image in terms of form and content.
3. There is only one good composition of an image (moving, still) and it is like any work of art. It has its own rules and assets.
4. Moving images are distinguished from still images by being audio-visual and not just visual. This movement inside an image's elements constitutes a part of the process of visual perception and leads to a better understanding of the image's content.
5. A moving image is considered one of the most complex types of visual perceptions as each person perceives it differently than the other. This is because the process of perception

lies on the physiological and psychological states of every person as well as their understanding of the semiotic indications according to their social and cultural background.

6. Our perception of an image lies in our way of thinking, our previous expertise, our understanding of the mechanisms of sight and photo analysis, the nature of our physical activity (tired, sick) as well as our cultural status.

7. Our focus point in an image affects our understanding and perceiving of its connotations.

8. Operators working on animated images (directors, interior designers, photographers) should take into consideration the principles and rules of the technical configuration of a moving image, as well as the movement of an agent within its elements.

9. There is a necessity to compile the research that addresses the content and connotations of images in one practical research that all researchers can access.

10. It is important for those working in the field of image industry to understand that the cultural codes implanted in the images they produce must reflect the features of our local identity. Otherwise, these codes may lead to changes in the behavior of the recipients because of their viewing of the identities of other cultures.

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