

## THE IMPACT OF FACIAL SYMMETRY AND ASYMMETRY ON BEAUTY AND ATTRACTIVENESS IN CHARACTER DESIGN

أثر تناظر الوجه وعدم تناظره على الجمال والجاذبية في تصميم الشخصيات

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### ABSTRACT

*Symmetry is natural phenomena in the universe, presents itself strongly in the visual arts, especially in the field of portrait drawing, where the importance of this subject stands out when the artist begins to draw the portrait from facing position, this leads to entirely appearance of left and right side of the face, in this case, when comparing the accurate features of the face on both sides, it may appear not aligned perfect toward of each other, in addition, there are some differences in finer details of the features, where two halves not matched as when the picture is reflected in the mirror, so this phenomenon is known as "asymmetry faces", it's one of human characteristics, while there are other people who have completely "symmetrical faces", or have two halves of the face are almost identical, this lead to thinking about the impact of "symmetry" and "asymmetry" on the mutual feeling between humans about beauty and attractiveness, where researchers opinion in theoretical sciences of biological evolution that "symmetrical faces" are more beautiful and attractive, while opponents of this opinion find the "facial symmetry" is a disturbing matter because it makes the face more artificial.*

### KEYWORDS

*symmetry; beauty; attractiveness .*

### المخلص

يعتبر "التناظر" من الظواهر الطبيعية في الكون، وي طرح نفسه بقوة في الفنون المرئية ولا سيما في مجال رسوم "البورتريه"، حيث تبرز أهمية هذا الموضوع في حال شروع الفنان للرسم من وضعية مواجهه للشخص مما يؤدي إلى ظهور جانبي الوجه الأيمن والأيسر بشكل كامل، وفي هذه الحالة، عند مقارنة الملامح الدقيقة للوجه على كلا الجانبين قد تبدو غير محاذية لبعضها البعض، بالإضافة إلى وجود بعض الاختلافات في التفاصيل الدقيقة للملامح، حيث لا يتطابق الشطرين كما هو الحال عندما تنعكس الصورة في المرآة، وتعرف هذه الظاهرة بالوجوه "غير المتناظرة" وهي من السمات السائدة بين البشر، في حين أن هناك أناس آخرون يتمتعون "بوجوه متناظرة" تماماً، أو يكاد يتطابق فيها جانبي الوجه إلى حد كبير، وذلك يدعو إلى التفكير في مدى تأثير "التناظر" و"عدم التناظر" على الشعور المتبادل بين البشر بالجمال والجاذبية، حيث يرى الباحثون في العلوم النظرية لتطور الأحياء أن "الوجوه المتناظرة" أكثر جمالاً وجاذبية، بينما يرى المناهضون لهذا الرأي أن "تناظر الوجه" يعتبر أمراً مزعجاً لكونه يكسب الوجه شعوراً صناعياً متزايداً.

### الكلمات المفتاحية

*التناظر؛ الجمال؛ الجاذبية.*

## 1 INTRODUCTION

Symmetry and Asymmetry are natural phenomena in the universe, they are included in nature, biology, human, industrial, engineering, architectural and artistic activities. Symmetry is defined as any form or shape that contains exact similar parts facing each other and reflected around an axis, resulting two opposite halves separated by dummy line, each of them is a reflection to the other, like the reflection of vertical image into mirror, thus makes you feel a kind of beautiful mysterious in the symmetrical shape. In contrast to "Symmetry" there is "Asymmetry" which does not mean the collapsing of symmetry feature in shapes, in fact the symmetry will be still existing, but there are defects in alignment and size of the elements inside symmetrical shape, thus may be slight or more than acceptable.

"Symmetry" presents itself strongly in the visual arts, especially in the field of portrait drawing, where the importance of this subject stands out when the artist begins to draw the portrait from facing position, this leads to entirely appearance of left and right side of the face, in this case, when comparing the accurate face features on both sides, it may appear not aligned perfect to each other, in addition, there are some differences in face finer details, where halves not matched as when the picture is reflected into mirror, so this phenomenon is known as "asymmetry faces", it is one of human characteristics, while there are other people who have exactly "symmetrical faces", or have halves of the face almost identical.

Therefore, this leads us to thinking about the impact of "symmetry and asymmetry" on mutual feeling between humans related to beauty and attractiveness, where researchers opinion in theoretical sciences of biological evolution that "symmetrical faces" are more beautiful and attractive, because it is proof to good genes and health stability during growth, also they consider "symmetry" as one of main criteria for measuring face attractiveness, while opponents of this opinion find the "facial symmetry" as a disturbing matter because it makes the face more artificial, they confirm that the lack of symmetry in faces grant it a kind of renewed mystery that makes faces more attractive and of unique beauty.

The literary opinions dealt with attractiveness topic discussed its relation with faces symmetry and asymmetry are somewhat conflicted, therefore, it is certain that getting the best results in this dialectical matter cannot be achieved by theoretical search, the research rather requires practical experiments to discover the facts about the impact of symmetry and asymmetry on the feeling of beauty and attractiveness in human faces, the measurement method depend on modifying some portraits and photographs to get precise symmetrical faces, using image editor software to create full picture from each of left and right face sides, then compare the two results with the original picture.

### 1.1 Research Problem

The research problem revolves around a scientific gap in the visual arts, especially in the field of portraits drawing regarding to phenomenon of "face symmetry and asymmetry" which has not been closely studied by the artists themselves, as well as the dialectical opinions that dealt with their impact on beauty and attractiveness.

- Is there an impact to facial symmetry on the sense of beauty?
- Is there an effect of facial asymmetry on human attractiveness?
- Facial symmetry or asymmetry, which one effects the sense of beauty?

### 1.2 Research Aims

The research aims to investigate the relationship between "symmetry and attractiveness" through scientific facts whence correlation related to the visual arts.

### 1.3 Research Objectives

- Analyze natural phenomena related to fine arts studies and field of portrait drawings.
- Perceive the facts of symmetry and asymmetry in terms of their effect on beauty and sense of attractiveness.
- Identify the health factors and invisible reasons that have an effect on human face appearance.
- Revise the dialectical literary dealt with the relationship between facial symmetry and attractiveness.
- Define additional gained factors that enhance beauty and feeling of attractiveness.
- Measure the level of symmetric face attractiveness on portraiture arts and photography faces using computer software.

### 1.4 Research Methodology

The research follows the descriptive analytical approach, where the scientific facts are taken into consideration to assist in defining and explaining with examples, together with the analytical method that uses the facts that have been confirmed to form the base of research and criticism of the subject.

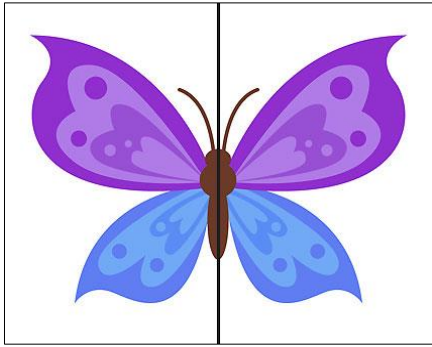
### 1.5 Research Limitations

Lack of previous literature studies in the research area. There is no Arabic literature that discusses the reasons of this phenomenon, Also, the scope of discussions in artistic references does not refer to the topic in depth without going into the scientific reasons.

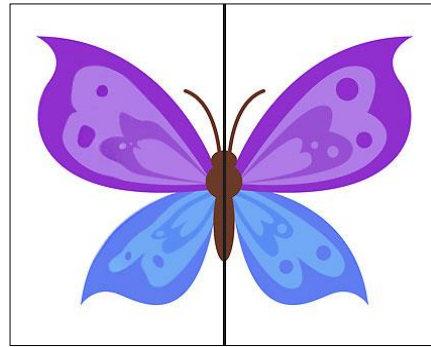
## 2. THE SYMMETRICAL OBJECTS

Symmetrical objects are found everywhere around us, in nature, architecture and art, the symmetry shape contains two identical and reversed halves, each one is a reflection of the other, and the dummy line dividing the shape into identical halves is known as line of

symmetry, it can be vertical, horizontal, or diagonal, it may be one or more lines, If the shape is symmetric, that means it is identical on both sides like the reflection of an image in the mirror. (Figure 1) shows the drawing of a butterfly, where the details of the body are exactly mirrored on both sides, while the opposite is "asymmetry", where the elements are reflected on



*Figure 1, Symmetry in nature where elements appear mirrored on the other side.  
(Source: Researcher, 2021)*



*Figure 2, Asymmetry in nature where elements appear unmirrored on the other side.*

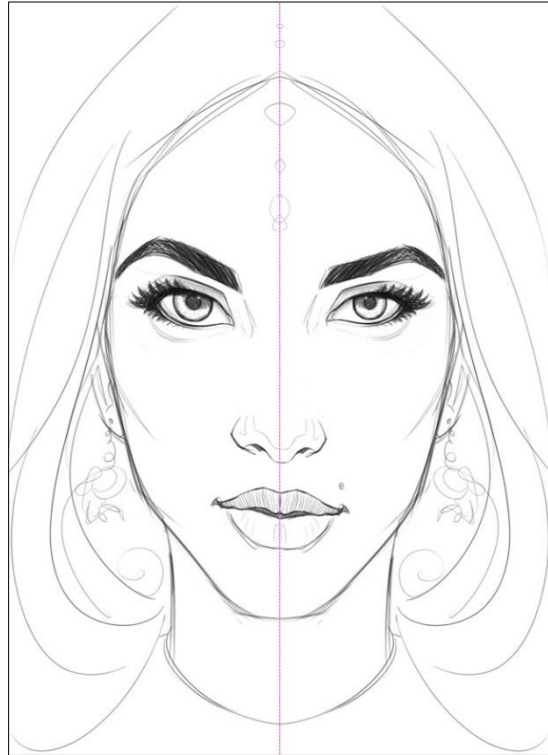
both sides without perfect matching because there are some unnoticed slight differences or may exceed acceptable limits, (Figure 2) shows another drawing for butterfly body unmirrored perfectly in each side.

### 3. SYMMETRY AND ASYMMETRY IN HUMAN FACES

Symmetrical face means that it is exactly identical on both sides like the image reflected into mirror, (Figure 3) shows facial symmetry where face features are appear exactly mirrored on each sides, in fact this type of faces is very rare between humans, while asymmetric faces are most common where all humans have various levels of asymmetry, there is no one has an exact symmetrical face, so anyone looks at himself in the mirror will notice his features not matched on both sides and not aligned to each other, may be one of the ear appear higher or bigger than another, crooked teeth, one side of nose is sharper than other, etc. In general, the form of the face features may vary in some of fine details on halves, (Figure 4) shows facial asymmetry where the right side contains some differences, for example; a little big eye tilted outward, thick eyebrow raised upward, a little big alar wing of nose, lips tilted slightly upward and jawline curved inward a little, therefore, the term of "asymmetric" is pointing to non-identical face features on both sides.



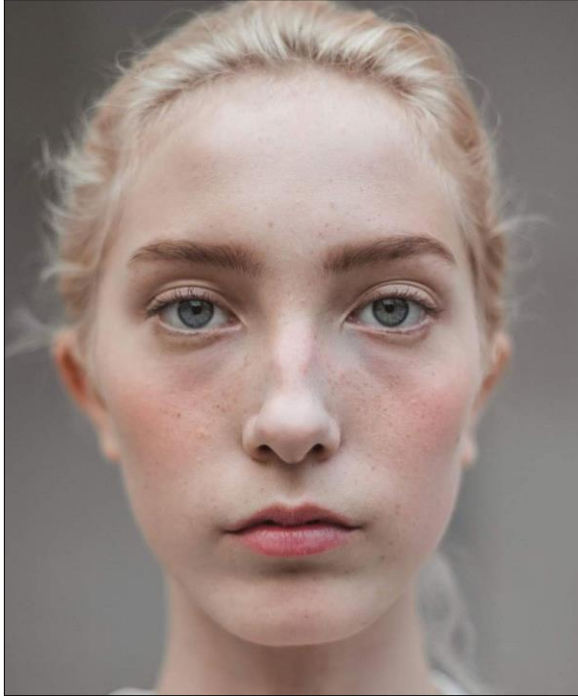
*Figure 3, Facial symmetry where face features are appear exactly mirrored on other side.*



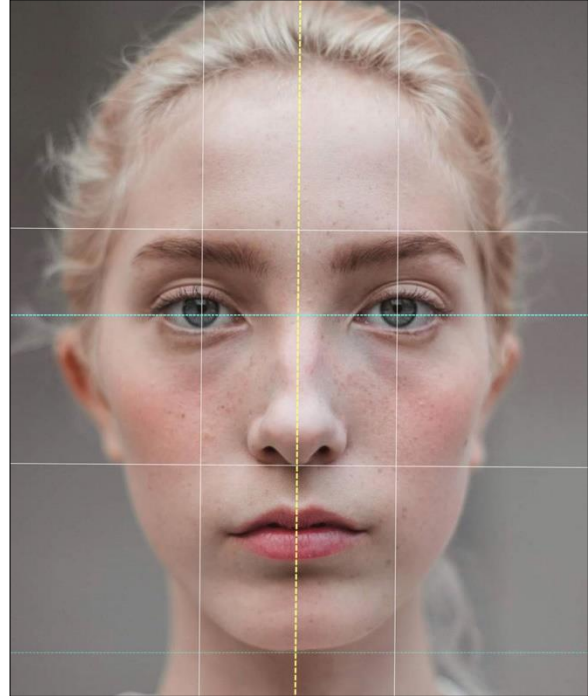
*Figure 4, Facial asymmetry where face features are appear not exactly mirrored on other side.*

#### **4. FACIAL ASYMMETRY CAUSES**

Asymmetrical face is a trait common in human race, nevertheless its causes are somewhat still unknown, it may be due to external factors like accidents or during normal childbirth or acquired by diseases or the result of defect during growth phases or teeth deformities and differences in the skeleton or because of ageing where cartilages continues in growth while bones stop, (Figure 5) shows facial asymmetry where the right cheekbone is noticeably larger than left one while the facial features keep their proportion to each other in acceptable position as eyes pupil aligned perfect to vertical and horizontal guidelines as shown in (Figure 6), whereas eyebrow, lips and chin are slightly tilted downward, with regard to abnormal asymmetry cases that catches eye due to exceeding the normal limits, it is requires plastic surgery as real distortions.



*Figure 5, Facial asymmetry where right cheekbone is noticeably larger than right side. (Source: Roberto Campos, 2018)*



*Figure 6, Facial features keep their proportion to each other in acceptable position.*

## **5. DIFFERENCE BETWEEN BEAUTY AND ATTRACTIVENESS**

Beauty feeling is associated to human perceptual, which differs in estimation from one person to another, beauty appearance depends on a pretty shape of the face features itself and proportion distances between of them, whenever it's perfect the face beautifulness will be increased, while "attractiveness" is the possession of qualities or features that arouse interest which increases when the facial features are non-common and have a kind of uniqueness and renewed mystery, always the mystery is main motive behind people's curiosity of pay attention to rare things.

Therefore, what should be emphasized in this matter that the beauty and attractiveness are two different things, where the beautiful person can be attractive or unattractive, Also, the person who is not beautiful can be attractive or unattractive, a person can be attractive, whether he is beautiful or not, so attractiveness is an additional trait different than beautifulness. That means the beauty factors are not a reason for attractiveness, and vice versa.

## **6. THE ATTRACTIVENESS STANDARDS**

The perspective of attractiveness has varied with different cultures and the huge changes through history, its standards have witnessed wide changes in their approach according to the place and time, in the past, courage has been one of attractiveness standards it was proof to strength and prestige, in other place fitness was a measure of attractiveness, nowadays the cultural concepts outperformed biological factors, taking in mind the roles played by globalization, communications revolution and dominance of Western media to changing the person's consciousness inserting new standards of attractiveness like skin color, hair texture, hairstyle, body shape, fashion, makeup, voice tone and culture, etc., however, the subject of attractiveness is very complex because its concept varies from person convictions to another in an incredible way, everyone has own his file that define the concept of attractiveness in a specific way which unconsciously created.

## **7. EFFECT OF PHYSIOLOGICAL FACTORS ON FACIAL SYMMETRY**

There are opinions considering symmetry faces is the main factor to feeling attractiveness and true indicator associated with freshness, some researchers have confirmed that more symmetrical faces are more attractive than less symmetrical faces, considering that the appearance of perfect symmetry in human faces is difficult body's tasks that must achieve during growth stages, which is associated with a long-term mental performance requires billions copies of cells to preserve a balanced physical structure.

Perfect symmetry proved that the person has not been exposed during growth to genetic disorders, diseases, malnutrition, or genetic mutations, so it is considered one of the good genetic signs that guarantee physically healthy offspring and affect in judgment of beauty and attractiveness.

Some researchers believe that self-confidence is related to facial symmetry, where people can detect lying by observing the faces during speech, because when anyone lie the facial muscles become unbalanced and facial asymmetry starts to appear, also there is a positive link between facial symmetry and happiness, where people with more symmetrical faces referred as more acceptable, socialite, smarter, open-minded, and less nervous, unlike people with asymmetric faces where they are suffering physiological disorder, with consider those statistics were carried out on limited cases and still in the research.

## **8. THEORIES OF EVOLUTIONARY ADVANTAGE & PERCEPTUAL BIAS**

The opinions that considered faces attractiveness depending on symmetry, believes that the humans innate behavior tend towards symmetrical faces because of its effect on attractiveness between men and women or versa, considered that the women or the men that own more symmetrical faces play a major role in attractiveness sense towards each other, unlike asymmetric faces that are less attractive, this belief based on two different theories explaining the tends of people towards symmetrical faces.

The First theory; the "Evolutionary Advantage Theory" suggests the symmetrical faces are more attractive because it is a sign of person's good health where his genes were able to generate a perfectly symmetrical face, with age, diseases, infections, and parasites cause appearance defect called asymmetry.

The second theory; "Perceptual Bias Theory" suggests the human mind tends to sympathize with symmetrical things ignoring asymmetric ones, where the balance arising from repetition of symmetric elements creates a feeling of comfort due to tracking the identical rhythms of elements, if that's true, then the mind interacts with symmetrical things is very easier than asymmetrical things, this would automatically make us prefer symmetrical things over asymmetrical things, in this context, our preference for symmetrical faces will not be different from our preference for symmetrical objects, therefore human race prefer all symmetrical elements of any kind, this concept was confirmed by observe the tendencies of people in the field of fine arts towards symmetrical abstract and sculpture arts rather than asymmetrical one.

## **9. THE OPINIONS AGAINST SYMMETRIC FACES ATTRACTIVENESS**

The opinions that considered face attractiveness depends mainly on its symmetry, it finds other opponents providing strong proofs confirming that symmetrical faces can be an upsetting thing, because this perfect symmetry creates an artificial feeling in a face and makes it looks fixed without vitality.

In fact, the exactly symmetrical faces does not exist in humans, because everyone has moderate degree of asymmetry in his face, where the faces that can be considered symmetrical are not exactly symmetrical in the true sense of the word, there is no face in nature absolutely symmetrical, there will always be differences between the halves of face that may be very slight and unnoticeable, which illusion us that they do not exist.

(Figure 8) shows a beautiful girl, her face looks at first sight exactly symmetrical on both sides but the inescapable fact unlike this where there are differences on both sides, this supports the opinions referring that "there is no asymmetrical face in human race", let's look at the right side of the lips, it have tiny smile slightly rise upward while there is no such on the left side of the face, the right eyelid is slightly larger than the left, the left eyebrow is rise upward a little and have differs shape than the right, the right cheek is slightly larger than left.

In fact, the right side of the human face is more attentive and positive than the left side. After comparing (Figure 9) with (Figure 7), will find the face resulting from the right side is more hopeful and springier due to the light smile and eye activity, while the face resulting from the left side is stiff and lazy





*Figure 7, Left side symmetry.  
(Source: Valua Studio)*



*Figure 8, Original face.  
(Source: Valua Studio)*

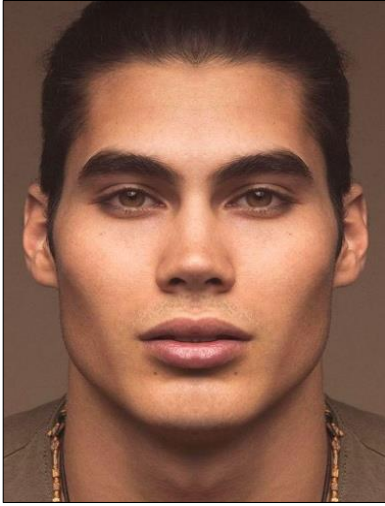


*Figure 9, Right side symmetry.  
(Source: Valua Studio)*

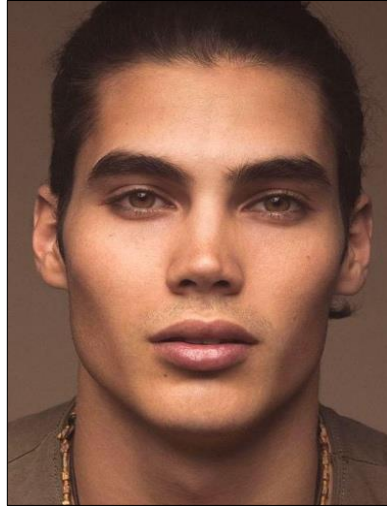
## 10. CREATE SYMMETRICAL FACES BY PHOTO EDITING SOFTWARE

Getting correct results in this research subject cannot be achieved through literary alone without practical experiments to prove the facts, because there are a lot of disagree opinions, the practical experiment depends on use photo editing software to create exactly symmetrical faces from portraiture drawings or photographs images to create two full pictures from each side of the face, then compare the result with original image to determine which one of three images provide a fine and final prove of the question, which one have effect on beauty and attractiveness, the symmetric or asymmetric faces?.

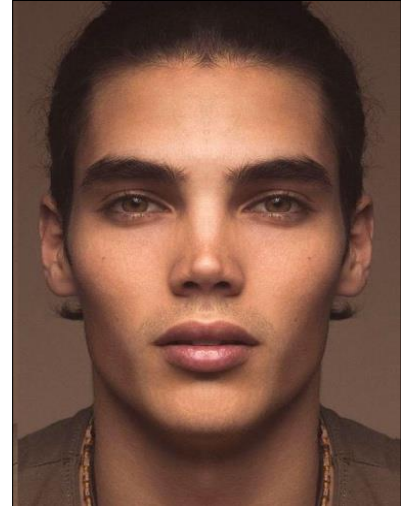
(Figure 11) shows the original photograph of young man have asymmetrical face, the researcher has created two faces that exactly symmetrical from each side of his face, we got the result in (Figure 10) a fully symmetrical face from the left side of original face, also (Figure 12) there is another fully symmetrical face from the right side, which is somewhat acceptable compared with the face in (Figure 10), Although the original face in (Figure 11) is asymmetric but it is more acceptable and attractive than the two artificial faces, this emphasize that asymmetrical faces doesn't have any negative effect on the beauty or attractiveness of the face, As we will get a similar result when repeating the same experiment with (Figure 14) two exactly symmetrical faces in (Figure 13) and (Figure 15) which are less acceptable than original asymmetric face in (Figure 14).



*Figure 10, Left side symmetry.  
(Source: Pinterest)*



*Figure 11, Original face.  
(Source: Pinterest)*



*Figure 12, Right side symmetry.*



*Figure 13, Left side symmetry.  
(Source: Pinterest)*



*Figure 14, Original face.  
(Source: Pinterest)*



*Figure 15, Right side symmetry.  
(Source: Pinterest)*

In the following experiments, I will repeat the previous steps on portrait drawings, where symmetrical faces in (Figure 16) and (Figure 18) shows a clear difference in the result from the original drawing in (Figure 17) which is considered asymmetric face, yet it is more beautiful

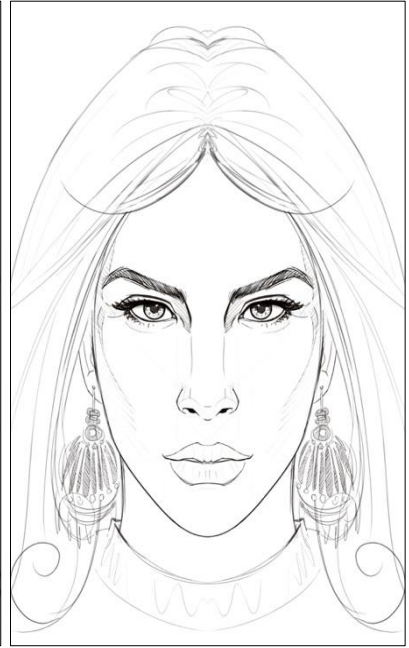
and attractiveness, emphasizing that there is no kind of negative impact towards the beauty and attractiveness of the face as long as asymmetry is within acceptable limits.



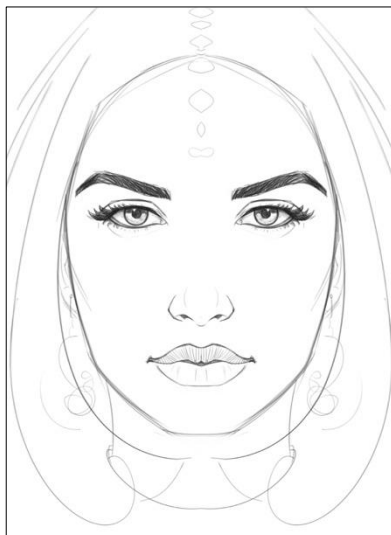
*Figure 16, Left side symmetry.*  
(Source: Researcher, 2021)



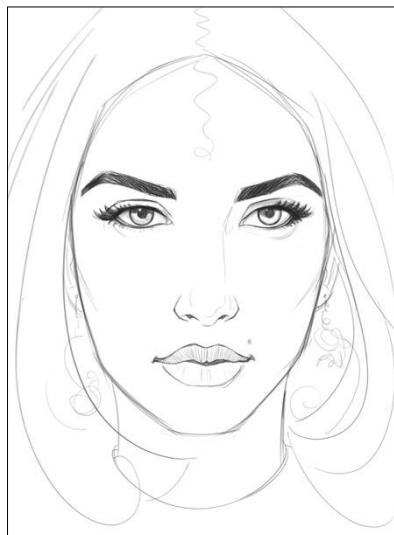
*Figure 17, Original face.*  
(Source: Researcher, 2021)



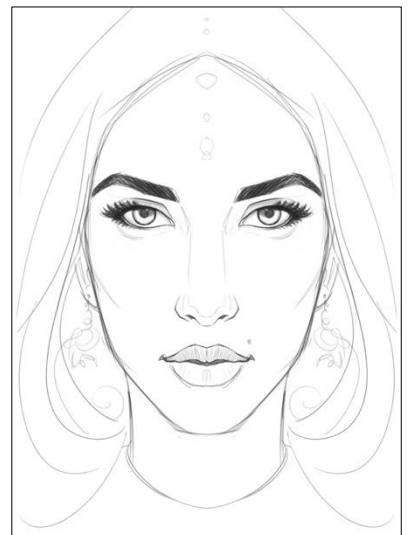
*Figure 18, Right side symmetry.*



*Figure 19, Left side symmetry.*  
(Source: Researcher, 2021)



*Figure 20, Original face.*  
(Source: Researcher, 2021)



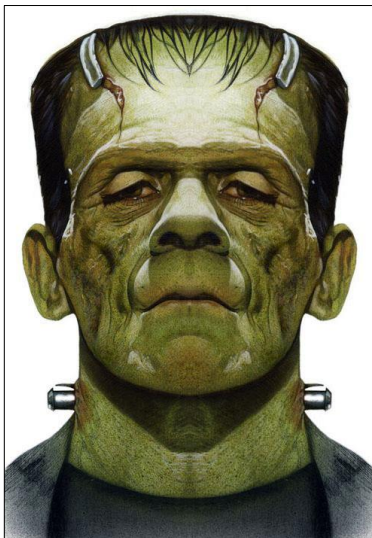
*Figure 21, Right side symmetry.*  
(Source: Researcher, 2021)

## 11. FACIAL SYMMETRY DOES NOT MEAN BEAUTY

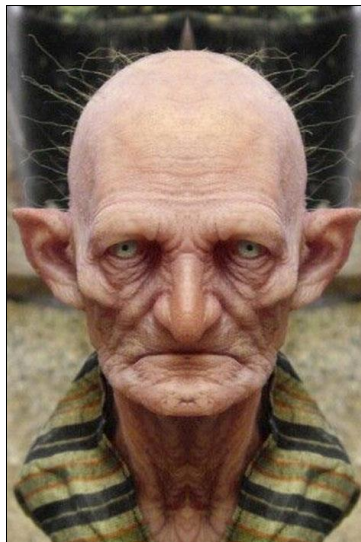
The researcher's opinion is that the beauty of human faces stems from the beautifulness of facial features itself and their fine details which are considered as main constituent elements of the face. When each element is beautiful in itself and in proportion with other elements like the shape of eyes with eyelashes and eyebrows, also the proportional distance between the two eyes and their relationship to nose in shape and size, and shape of lips and cheeks in harmonious with outer lines of jaw and chin, all of them lead to feeling of beautiful face.

Therefore, the belief that only facial symmetry will generate a sense of beauty for a face devoid of beautiful details is unfounded.

Consequently, if the beauty factor does not exist clearly in these elements separately, then the belief that only facial symmetry will generate a sense of beauty or attractiveness for a face devoid of beautiful details is unfounded, also, the same result is achieved if the faces are asymmetrical, so this claiming can be proven through a practical experiment on three pictures of asymmetrical ugly human faces, where the (Figures 22, 23 and 24) shows a clear practical to generating a symmetrical face from half face devoid of beauty, this confirms without a doubt that symmetry alone cannot generate a feeling of beauty or attractiveness if the facial features lack beauty.



*Figure 22, Left side symmetry.  
(Source Frankenstein Face)*



*Figure 23, Original face.  
(Source: Internet)*



*Figure 24, Right side symmetry.  
(Source: Internet)*

## 12. THE ATTRACTIVENESS IN ASYMMETRIC FACES

Asymmetry of faces, which means a slight differences on both sides, gives it a kind of mystery and renewed beauty when the faces change its position or viewing angles if each side of the face are beautiful, then that is mean each part of them adds astonishment and enhances the feeling of attractiveness.

## 13. RESULTS AND DISCUSSION

- The origin of beauty and attractiveness in human faces stems from the facial features itself.
- Symmetrical and asymmetrical faces have a slight effect on beauty and attractiveness.
- The symmetry in faces generates an artificial feeling makes it looks fixed without vitality.
- Asymmetrical faces are more attractiveness than symmetrical faces.
- The right side of asymmetric faces is more acceptable and livelier than left side.
- Everybody has a moderate degree of asymmetry in the face, there is no face in nature is exactly symmetrical.
- People attractiveness may increase with age due to asymmetry of the face as a result of aging
- The reasons of human facial asymmetry are still unknown.
- Beauty and attractiveness judgements is complex, there is no consensus on one thing because it varies depending on the place, time and culture, everyone has their own criteria in his mind.

## 14. RECOMMENDATIONS

Encouraging research in discussing scientific opinions related to visual arts subjects and illuminating commonalities across art and science.

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