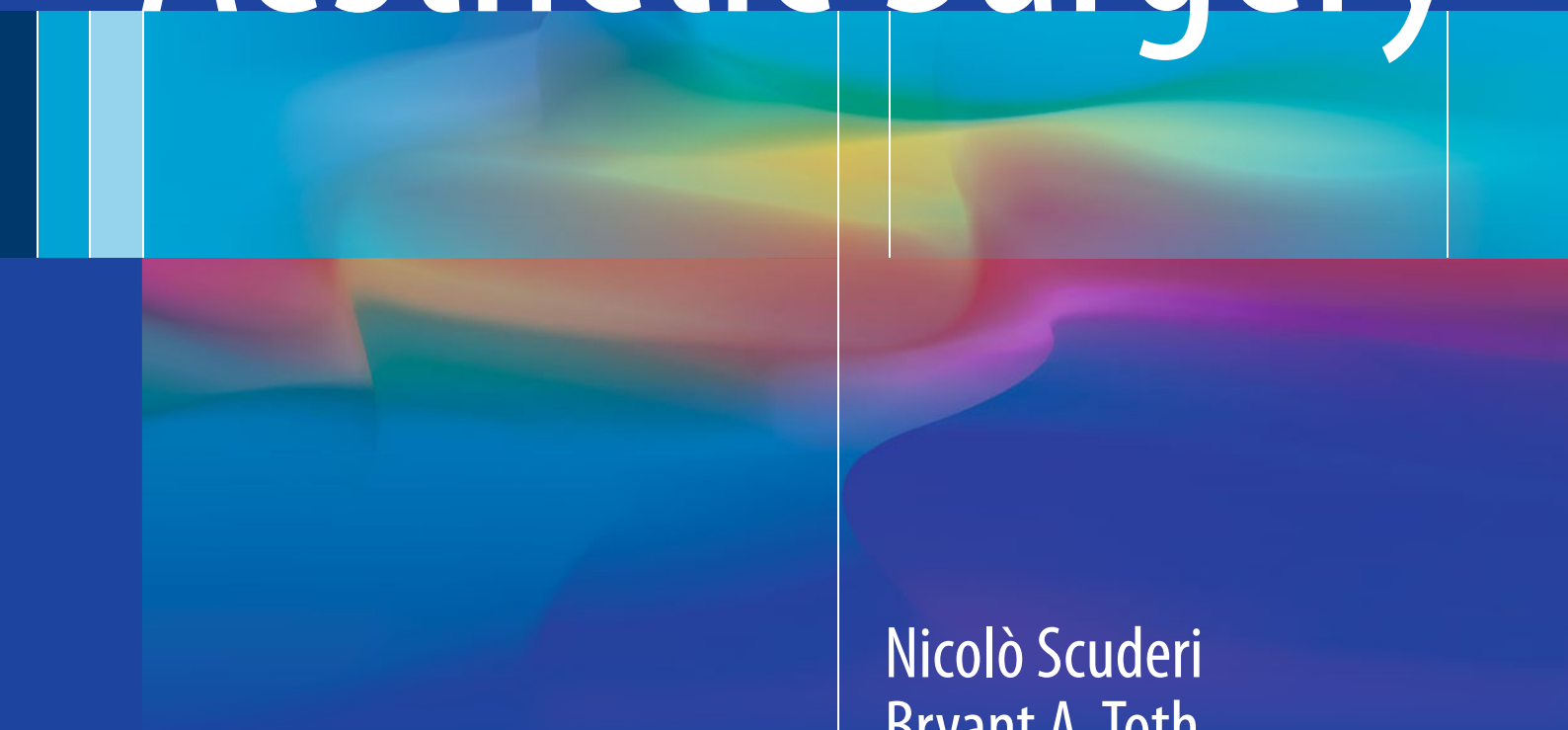
International Textbook of Aesthetic Surgery



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Springer

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International Textbook of Aesthetic Surgery

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Introduction

This textbook represents the collaboration of two close friends from separate continents who felt there was a need for a true *International Textbook of Aesthetic Surgery*. Such an idea is not a new one. Italian and American plastic surgeons have been meeting on a biannual basis sharing ideas as well as formulating new ones. At our first meeting in 1988, it was a surprise for both of us that although we agreed most of the time, frequently different approaches led to similarly satisfactory results. These meetings became a forum for presenting new ideas as well as novel surgical techniques. Included in this book are many who participated in these collaborations as well as their pupils. We used this as a starting point to transfer this experience into a book form in order to share with others what we think represents aesthetic surgery today.

Surgery has changed dramatically over the past 20 years, and nowhere is that more evident than in cosmetic surgery. Expectation is high and the relationship between plastic surgeons and patients has become almost a commodity with a seller and a buyer. Today's patient is unwilling to accept long hospitalizations, lengthy periods of recovery, or unattractive scarring. The expectation of a "natural look" post surgery is now the cornerstone of modern aesthetic surgery. The role of nonsurgical treatments for the skin, i.e., fillers, Botox®, and the like has complemented what we are able to do surgically.

In this textbook, we present a panorama of surgical techniques and share with you what we consider contemporary aesthetic surgery to be. And it is in this vein that the intent of this book is not to present an encyclopedia of surgical techniques but rather an approach from those who we feel are on the cutting edge, both medically and surgically. As you can note from the index we have invited not only Italian and American authors but trusted friends whose work and approach we admire.

Since the Italian publication of this book, we have lost two shining stars in our world of aesthetic surgery, Dr. Fernando Ortiz-Monasterio and Dr. Daniel Marchac. Their two chapters, the first two of the book, lay the cornerstone for this publication and also represent their last contributions to the literature. We all owe a great debt to them for their innovations, skill, and their willingness to be mentors and teachers to many of us.

We would like to thank all of those who have contributed to this project including our families, office staff, and fellow authors. Most importantly, we would like to thank our patients who have provided the surgical challenges as well as the continual inspiration we have enjoyed as plastic surgeons.

Nicolo Scuderi and Bryant Toth

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Part I

Introduction to Aesthetic Surgery

The Concept of Beauty in Different Cultures

Fernando Ortiz Monasterio

The discussion of what is beautiful and what is not has occupied the attention of philosophers, mathematicians, artists, architects, anatomists, surgeons, and theologians for the last 2,500 years. In general terms the idea of beauty applies to the human figure, to animals, and other elements of nature as well as to architecture, design, and artistic representations.

Human representations left by early societies emphasize anatomical features related to fertility, like the wide hips of the "Venus" de Lespugue and other examples of primitive art associated with obesity suggesting good reserves of fat necessary for survival in times of famine. These desirable qualities were obviously considered beautiful and precede the ideas of Greek philosophers who associated both concepts: beauty and virtue (Fig. 1).

The representation of feminine figures with wide hips associated with fertility is present in many cultures as can be seen in the Cycladic art of 2000 BC and in the deliciously erotic figures from the preclassic period of Mexico, molded around 500 BC not only representing fertility but also an aesthetic ideal (Fig. 2).

The Greeks had a passion for beauty and explored the rules for the harmonious proportions applicable to all the things in nature and in art. The search for a mathematical formula for beauty was initiated by Pythagoras, who did not write much but influenced his disciples, including Plato. He developed the theory of harmony and conceived the essence of beauty as the order, proportion, and harmony of the subject. He also considered beauty as a quantitative, mathematical quality that could be expressed in numbers.

Similar ideas were proposed by Philolao in the fifth century BC and further developed by Vitruvio in his book "De Architectura" written in the first century AD with detailed discussions on the proportions of the human body [1].

The return to platonic thinking in relation to beauty appears in the works of Bonaventura de Bagnoregio ("Itinerarium mentis in Deum," XII AC) [2], who wrote that beauty was implicit in the original design of God at the time of the creation, and Thomas de Aquino (XII AC), who added that "beauty is what is pleasant to our eyes" [3].

Greek anatomical knowledge based on keen observation of the human body (combined with their passion for beauty) resulted in a magnificent production of sculpture considered to this day as the aesthetic golden standard. These classical proportions were accepted by the Romans who reproduced many of the Greek works preserving the canon of beauty later adopted by the anatomists of the sixteenth century such as Vesalius, Eustachio, Casserius, Mascagni, and many others who followed the Greek models for the illustration of their work [4]. For the validity of this concept we may observe the similarity of the body of the sculpture of the Greek "Discóbolo" with a modern Olympic athlete. The main difference between these two models is conceptual; beauty for the Greeks was the combination of the body and the soul with a developed intellect whereas physical beauty only is considered for the modern athlete (Fig. 3).

In his work "Anatomy for Artists" published in 1723, Genga [5] selected roman copies of classical sculptures of the late Hellenistic period: the young man in a position of attack, a thoroughly trained athlete representing the Greek ideal of harmony of the body and the soul. He also represented Aphrodite as a serene being, alone in her human divinity; she is a mature woman with voluptuous curves; except from the small breasts, she could represent the modern occidental concept of feminine beauty (Fig. 4).

Many authors during the Renascence maintained the concept of the mathematical formula for beauty. The writings of Piero della Francesca, Fra Luca Paccioli, and especially of Dürer contributed to establish an aesthetic canon that had great influence on the work of many artists like Donatello, della Robbia, Verochio, Leonardo, Raphaello, and Michelangelo.

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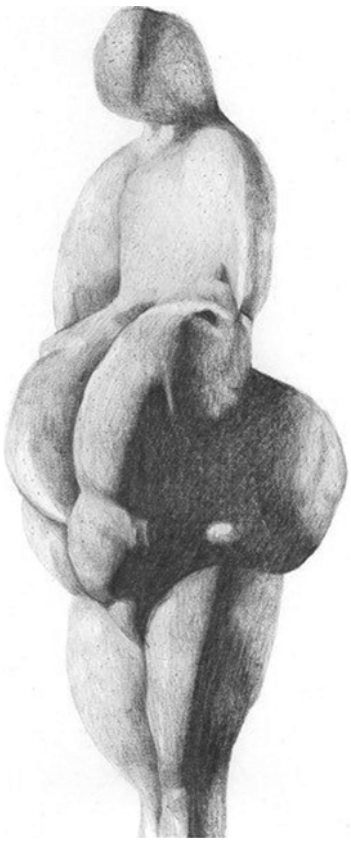

Fig. 1 Venus de Lespugue. Prehistoric. Wide hips and abundant body fat emphasize fertility and nutritional reserves

Fig. 2 Ceramic figure from Tlatilco, Mexico. Preclassic period. Wide hips suggesting fertility. Also notice antimongoloid slanting of the eyes

Fig. 3 Discobolo by Myron. V Century BC

Fig. 4 Aphrodite. A copy of the Greek model by Genga. XVIII Century

To the south side of the Mediterranean, the Egyptians, before the Greeks, produced marvelous sculptures representing the human body according to the ideal standards of their culture. In all of them a slim athletic figure is emphasized for the Pharaohs and their consorts (Fig. 5). To reinforce the concept that Egyptian sculptures were carved representing the ideal of beauty it is convenient to remember the many images of Queen Hatshepsut who ruled Egypt from 1479 to 1458 BC. She is always shown with a slim elegant body but when her mummy was finally identified in 2007 it was demonstrated that she was a fat lady with pendulous breasts [6].

Dürer in 1532, following the platonic tradition, published his work on the mathematical expression of the ideal human body. His book was translated from the original German version into Latin by Joaquim Camerarios the Elder in 1557 and later into many languages [7]. It is a very extensive treaty on physical anthropology in which both the male and the female ideals are analyzed at rest and in motion seen from different angles (Fig. 6).

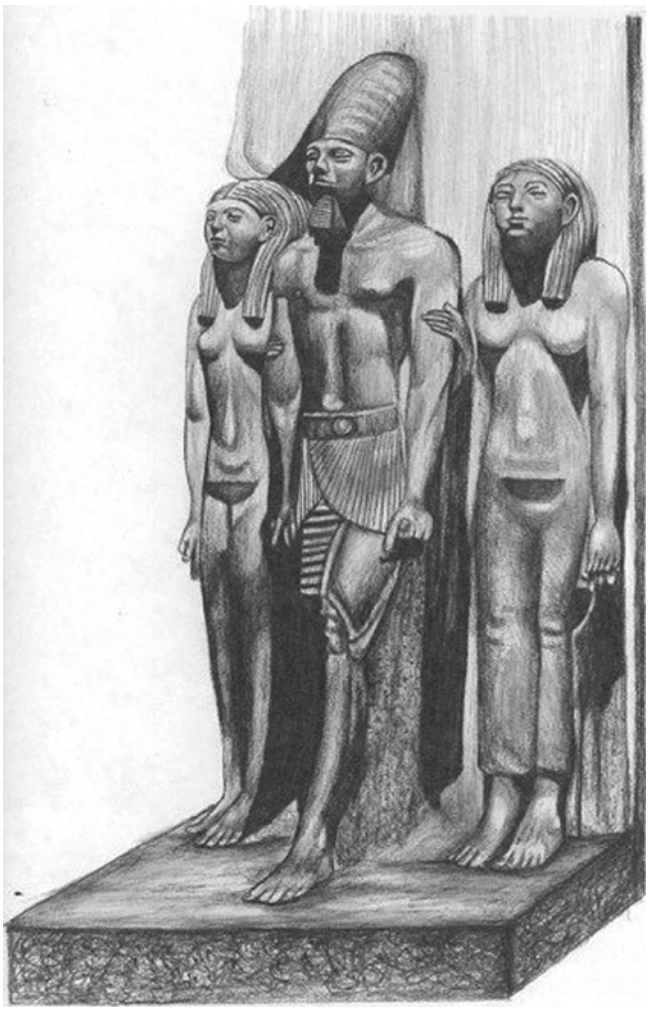

Fig. 5 Egyptian sculpture showing a ruler and his consort with athletic bodies 1500 BC

Dürer, a contemporary of Bellini and Andrea Mantegna, is possibly the most important theoretician in the history of art sharing this honor with Leonardo. His numerous drawings attest also his quality as an artist. His paintings are magnificent representations of the aesthetic concept of the Renaissance. "In Adam and Eve" he depicted his ideal of beauty with lean athletic figures (Fig. 7).

Durer's meticulous measurements of the different parts of the human body established a canon widely adopted by his contemporaries that is still valid today.

This same lean feminine figure was frequently painted by the most distinguished artists. Examples of that are the "Venus" of Lucas Cranach and the "Venus in front of a mirror" by Velázquez from the beginning and the middle of the seventeenth century, respectively. Simultaneously other extraordinary artists living in more northern latitudes such as Rubens painted overweight females like the "Three Graces." These works did not pretended to be portraits of a specific person so we can assume that his choice of models corresponded to his concept of beauty. Without underestimating the artistic and technical quality of this canvas, the females painted by Rubens would be candidates for dieting and extensive liposuction in the twenty-first century (Figs. 8 and 9).

Sensual feminine representatives of the ideal of beauty can be observed in the work of Ingres in the nineteenth century. The women in his "Great Odalisk" and "Ladies in a Turkish Bath" are not lean; they are slightly overweight by the standard of the twentieth century when a trend to extremely thin female body became fashionable.

We must accept that representations of the human body made by prominent artists probably correspond to their ide-

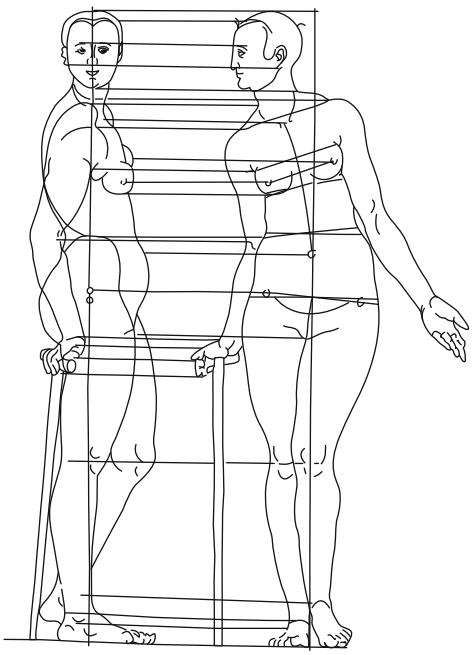

Fig. 6 Drawing by Albert Dürer of ideal female body. XVI Century

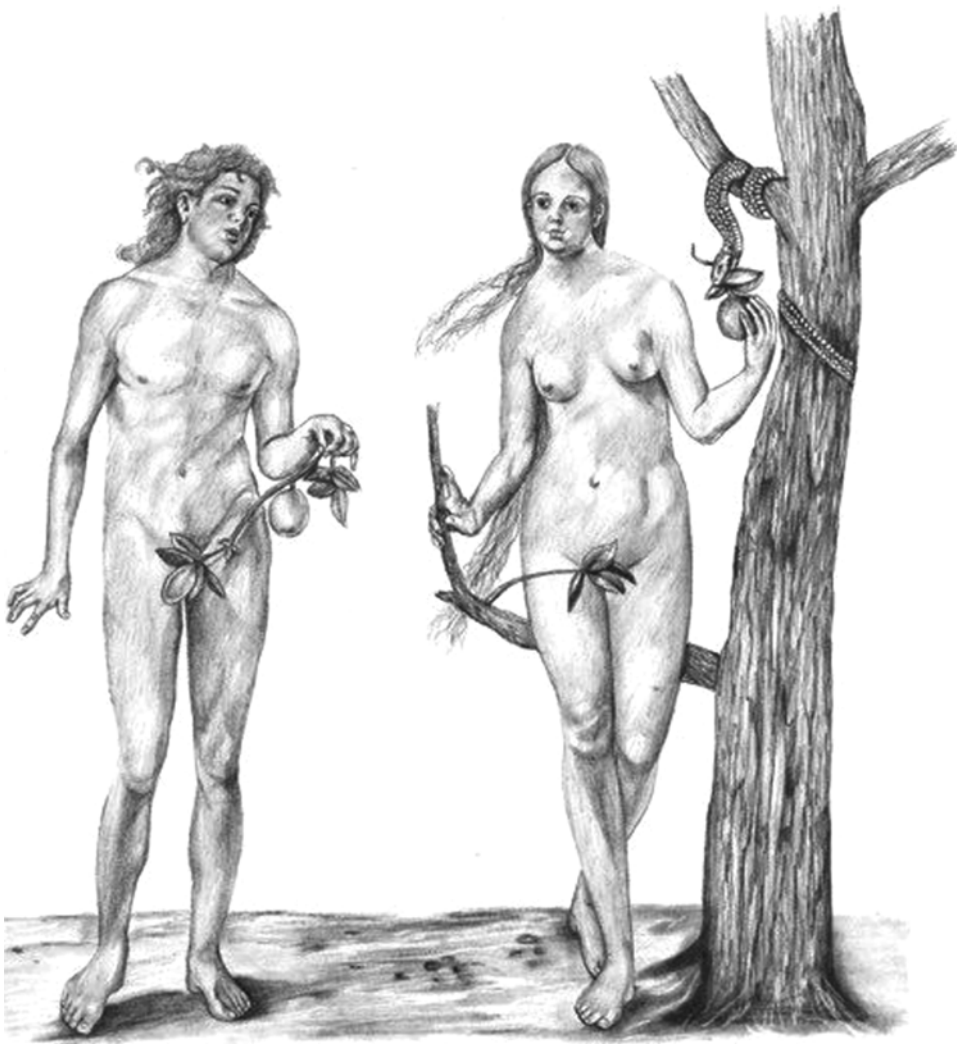

Fig. 7 Adam and Eve by Dürer. XVI Century

als of beauty. We also know some painters modified the features of their models to conform with the canon.

Nude reclining women are a recurrent subject in paintings from different epochs. I have selected a few examples in order to identify the variations of the concept of beauty in the occidental culture at successive centuries: "The Venus of Urbino" by Titian in the sixteenth century, "Venus in front of a mirror" by Diego Velazquez in the seventeenth century, the lovely voluptuous "Maja Desnuda" by Francisco de Goya in the eighteenth century, the magnificent "Olympia" by Manet in the nineteenth century, and the "Seated Nude" by Tamara de Lempicka in the twentieth century. All of them are excellent examples of feminine beauty representing young women not very different from each other and very similar also to the Greek ideals and the Renaissance canon of Dürer and Leonardo. They all are somewhat different than the athletic lean models with androgynous overdeveloped musculature currently emphasized by certain modern publications. There is a current tendency to reject the extremely thin female figure, almost bulimic, replaced by a new trend that considers a heavier even slightly overweight model beautiful. This fuller feminine figure was also repeatedly painted in the splendid nudes of Tamara de Lempicka in the first half of the twentieth century (Figs. 10–14).

Pondering over the representations of the human body over the ages, it is clear that the concept of beauty seems to be universal; its appreciations is probably not related to the cognoscitive part of the brain but located in the limbic area.

In spite of its universal character, there are variations determined by fashion, by race, and by geography. Within certain limits these variations conform to the canons that have been accepted over time. In the middle of the twentieth century, Le Corbusier, the famous French architect, built a habitational complex in Marseille according to his concept of adapting the habitat to the physical dimensions of the people. This idea was extensively discussed in his book "The Modulor" [8]. He also congregated a group of anthropologists, artists, anatomists, and architects to study and to determine the ideal proportions of the Homo sapiens in the twentieth century. The results of that work were carved in a

Fig. 8 Venus by Lucas Cranach idealizing a lean feminine body. 1506

"stele" similar to the stone monuments of ancient Egypt and to stelae of the cultures of Middle America designed to commemorate important events and to preserve them for posterity. This modern stele was placed at the center of the habitational complex (Fig. 15).

The measurements analyzed for that monument are representative of the European population. Their average height does not correspond to the mean of the population in many other parts of the world, where people are smaller. The appreciation of body height has been manifested in many cultures both for males and females. This concern had a direct influence in shoe design. We know Catherine de Medici the wife of the Duke d'Orleans who was a small person commissioned a cobbler to make her a pair of heels to increase her height. Those extensions had been used before resembling the modern platform shoes designed to protect the wearer when walking in the muddy wet streets. These extensions of the shoes, originally called "chapines," became very popular and originated an innovation of the shoe industry that is maintained at this time. The purpose of elevation of the heel and the plantar area was to increase height. Later designs, especially the tremendously high heels used by women now, have also affected the position of the legs and the curvature of the spine forcing the wearer to project the gluteal area in a very attractive manner. The fashion to increase the apparent height has extended to the male sex; many men of short stature wear specially designed shoes or boots to produce that effect.

It is interesting to mention that Albert Einstein attended a presentation of The Modulor made by Le Corbusier at Princeton in 1946. A few days later Einstein wrote him a letter saying: "of course Mr. Le Corbusier, you are perfectly right; everything that is right is easy and everything that is wrong is difficult." In other words, he was convinced that when a thing is harmonious, it is found pleasant by everybody.

The human face is the most important element, at least the most visible of the body and the subject of many of the professional endeavors of the plastic surgeon. All the anatomical structures of the body are supported by the skeleton which determines its shape and proportions. This is particularly true for the face [9].

The craniofacial skeleton is responsible for the shape of the face, for the harmony of its various segments, and it is also the framework where facial muscles are inserted, therefore influencing and contributing to expression which is a very important element of beauty.

The human face is one of the most beautiful structures in existence. The experienced examiner can easily appreciate the balance and the harmony between its different elements. He can also detect the flaws that may alter its balance. It is convenient, however, to remember a few general rules of physical anthropology to study the face in a systematic manner. The first step is to locate the points on the soft tissues corresponding to the skeletal references:

Trichion (TR), nasion (NA), dachrion (DA), subnasal (DA), alar base (A), stomiun (ST), chirion (CH), and mentón (M). These references are complemented laterally by

Supraorbital ridge (SO), lateral canthus (LC), temporal crest (TC), malar (MA), zygoma (Z), and gonion (GO) (Fig. 16).

Following the mathematical concept of the Golden Rule to examine a face, we can trace five imaginary horizontal lines: at the trichion, the nasion, the dachrion, the alar base, the stomium, and the menton (Fig. 16a).

The face is then divided in five segments that maintain a relation with each other, which very closely follows the divine proportion of 1:618 (Fig. 16b).

Analyzing the face as a complete unit the distance TR-DA is 0.618 and DA-M is 1. Approximately the same ratio is found when we measure the middle and the lower thirds of the face.

Fig. 9 The Three Graces by Rubens. The choice of models for this canvas illustrates his concept of feminine beauty

In the ideal face, the diameter between the temporal crests should be approximately the same as the distance between the two malar points and to the bigonial diameter.

Facial convexity is an important element of beauty. The harmonious relationship between the forehead, the nose, the mouth, and the chin results in a beautiful face. Facial convexity should be evaluated on the profile view tracing an imaginary line following the Frankfurt horizontal plane from the center of the external auditory channel to the inferior orbital border. Another vertical line is traced from the supraorbital notch to the most prominent point of the lower lip. The two lines should cross each other forming a 90° angle.

The nose should be examined on the full face and the base views and from the two profiles. On the frontal view the nasal bridge is seen as two parallel straight or slightly concave lines extending from the brows to the tip of the nose. The width of the bridge should be similar to the distance between the two tip highlights. A slight difference in height will be visible as shading should be present at the tip and the dorsum corresponding to the supratip break.

The nasal tip resembles the silhouette of a gull wing, the lateral portions corresponding to the alar notches. A small portion of the columella should be visible at the center. The

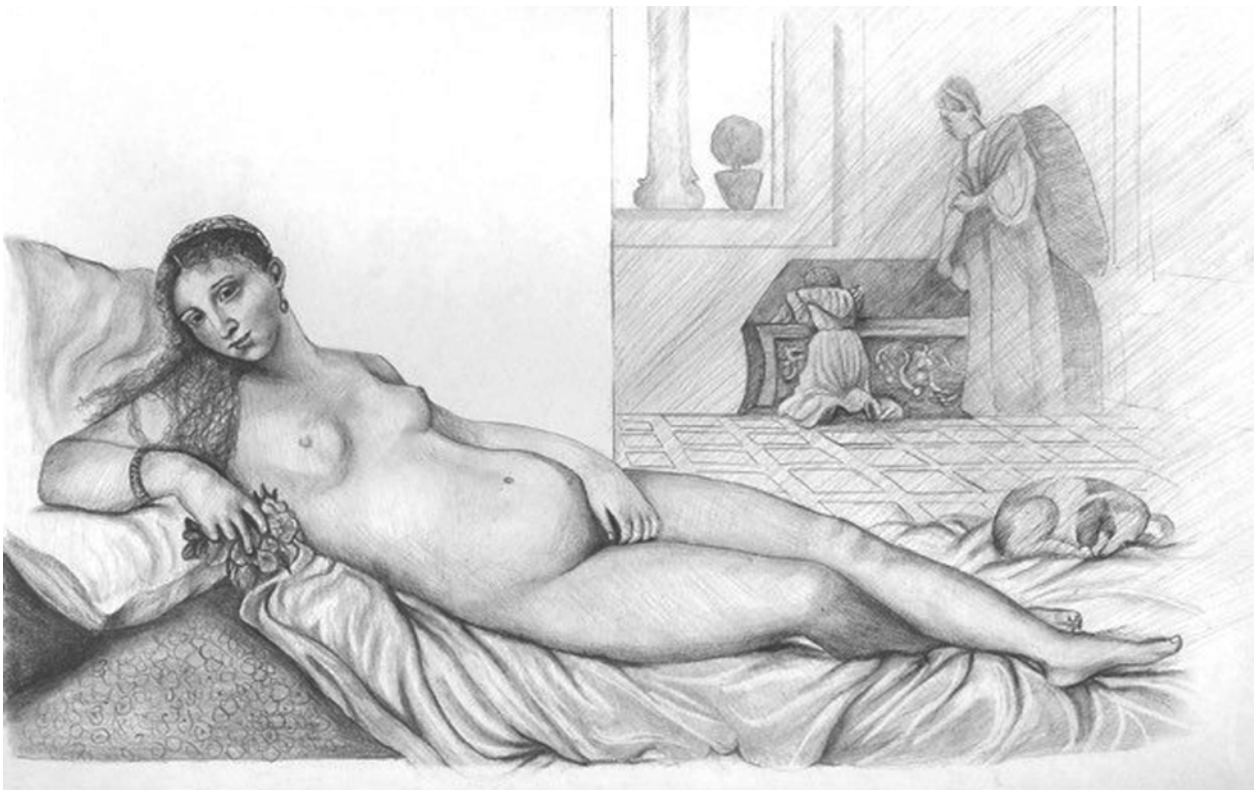

Fig. 10 Venus d'Urbino by Titian 1558

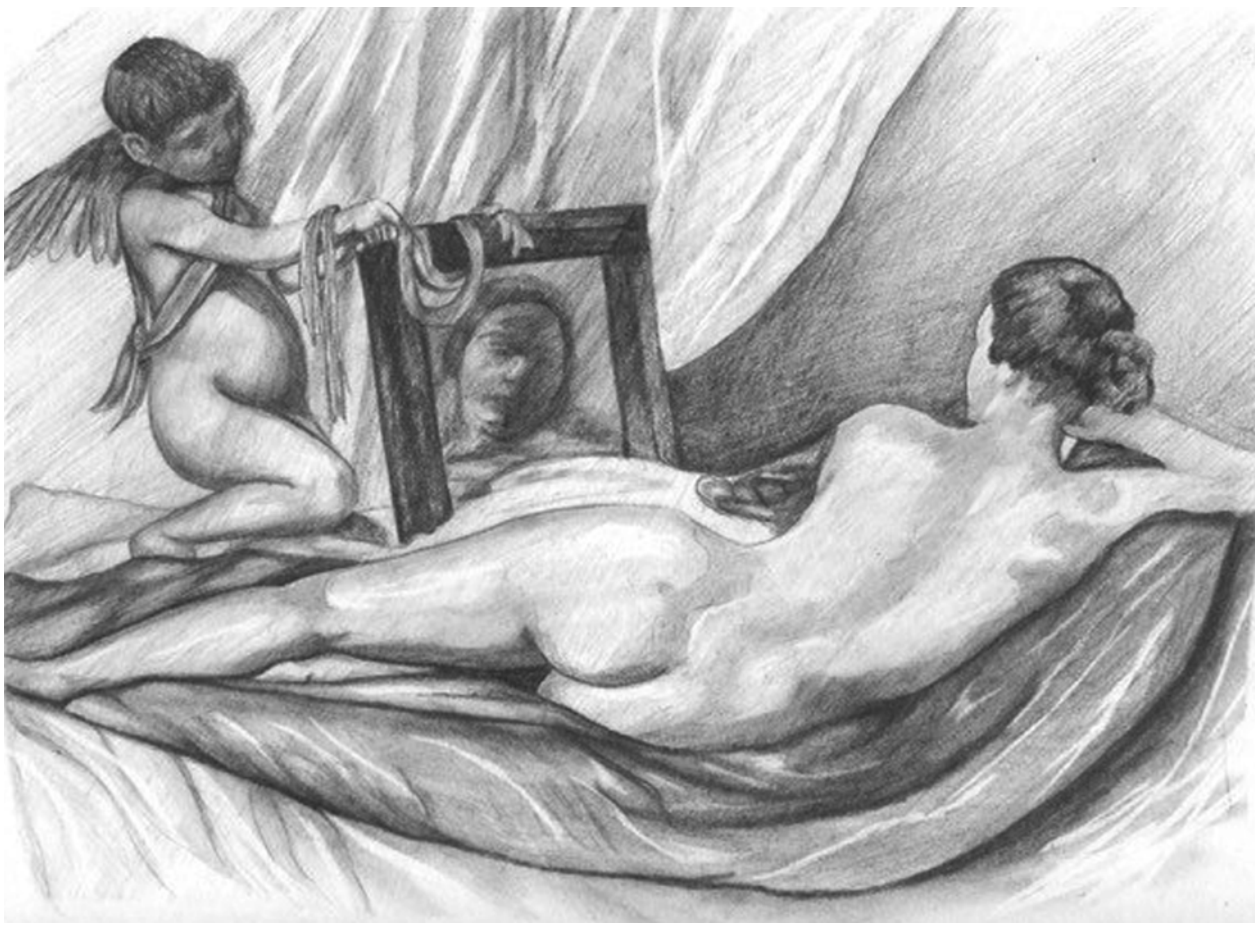

Fig. 11 Venus looking at a mirror by Diego Velazquez, 1650

Fig. 12 La Maja Desnuda by Francisco de Goya, 1797

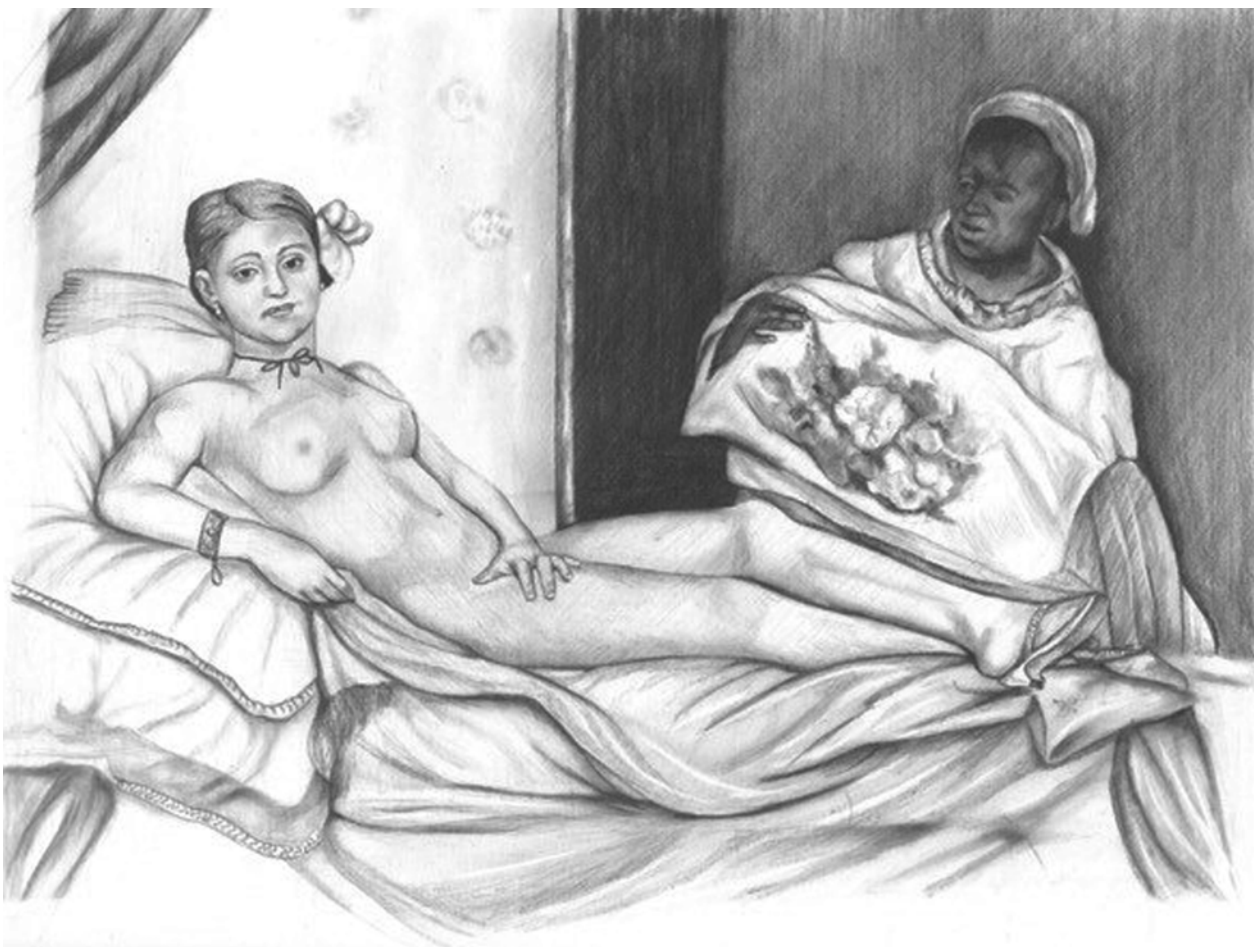

Fig. 13 Olympia by Manet, 1863

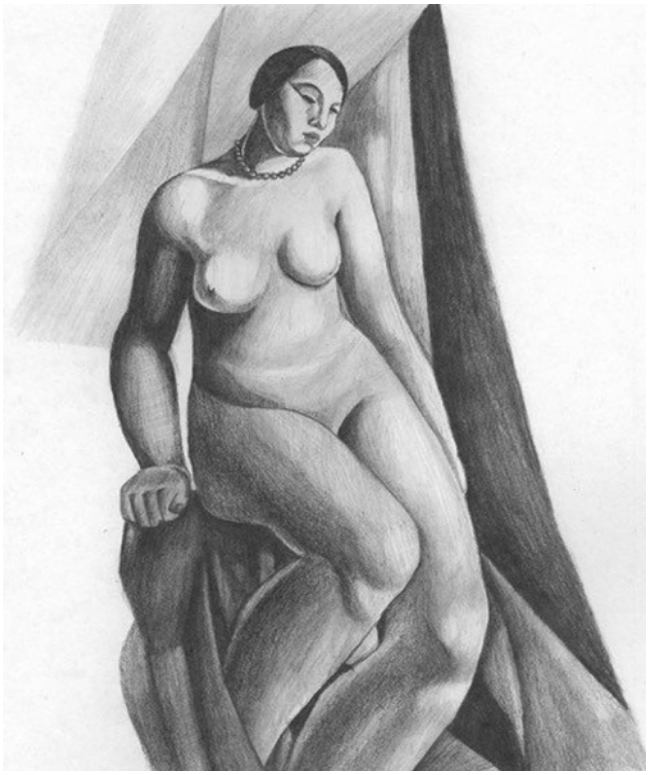

Fig. 14 Seated Woman by Tamara Lempicka, 1929

width of the nasal base should correspond to the distance between the medial canthus of the palpebral fissures.

On the profile view the nasal projection is assessed by drawing an imaginary line from the alar cheek junction to the lip. The center of this line should be crossed by the vertical facial tracing. The columella should be about 4 mm lower than the alar margin exposing the nostrils as narrow ovals. The accepted ideal nasolabial angle should be 90–105° in females and 90° in males.

The forehead should be slightly convex with an average height of 50–60 mm [10].

Sophisticated hairstyles cover the scalp of women and also of many men. For this reason the shape of the skull in not usually considered an important factor for beauty. Obvious deformations resulting from trauma or from birth defects alter the proportions of the cranium affecting its aesthetic quality, but, in general, a round smooth forehead is taken for granted and little attention is paid to the aesthetics of the skull.

Early cultures in many parts of the world practiced artificial cranial deformations. Pressure was applied with tablets to the heads of infants to alter the shape of the head for cosmetic reasons. Those early shamans had a good understanding of the growth capacity of the cranium. They knew that applying pressure on certain areas of the head the intracranial expansion produced by the rapid growth of the brain in an early age would direct the forces to other areas of the cranial cavity altering the shape of the head.

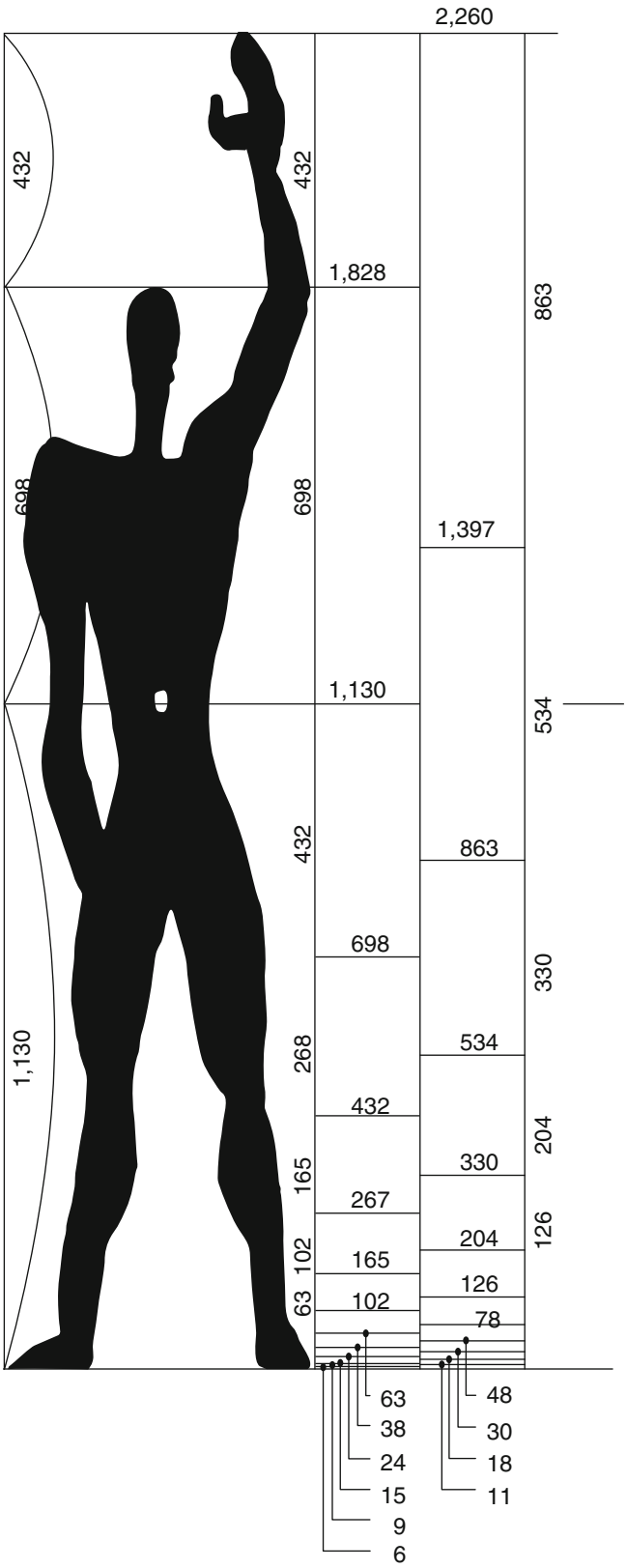

Fig. 15 Le Modulor. Study on human proportions. Le Corbusier, 1947