

Anatomical models and wax Venuses: art masterpieces or scientific craft works?R Ballestriero^{1,2}[Author information](#) ► [Article notes](#) ► [Copyright and License information](#) ►**Abstract**[Go to:](#)

The art of wax modelling has an ancient origin but rose to prominence in 14th century Italy with the cult of votive artefacts. With the advent of Neoclassicism this art, now deemed repulsive, continued to survive in a scientific environment, where it flourished in the study of normal and pathological anatomy, obstetrics, zoology and botany. The achievement of having originated the creation of anatomical models in coloured wax must be ascribed to a joint effort undertaken by the Sicilian wax modeller Gaetano Giulio Zumbo and the French surgeon Guillaume Desnoues in the late 17th century. Interest in anatomical wax models spread throughout Europe during the 18th century, first in Bologna with Ercole Lelli, Giovanni Manzolini and Anna Morandi, and then in Florence with Felice Fontana and Clemente Susini. In England, the art of anatomical ceroplastics was brought to London from Florence by the sculptor Joseph Towne. Throughout the centuries many anatomical artists preferred this material due to the remarkable mimetic likeness obtained, far surpassing any other material. Independent of the material used, whether wood, wax or clay, anatomical models were always considered merely craft works confined to hospitals or faculties of medicine and have survived to this day only because of their scientific interest. Italian and English waxes are stylistically different but the remarkable results obtained by Susini and Towne, and the fact that some contemporary artists are again representing anatomical wax bodies in their works, makes the border that formerly separated art and craft indistinguishable.

Introduction: a brief history of ceroplastics[Go to:](#)

Wax is a malleable substance that has been used for a variety of purposes since ancient times by the Egyptians, Greeks and Romans and continues to be an important material today. It can be obtained from many sources, including animal (beeswax, lanolin, spermaceti), vegetable (*Candelilla*, *Carnauba*) and mineral (*montan*, *ozocerite* and petroleum) (Chilvers, 2009; [Ballestriero, 2000/01](#)). From the 4th century BC it was used for encaustic painting, a technique in which paint was heated with wax to bond the pigments to the wax, resulting in bright, stable colours. The most remarkable surviving examples are the mummy portraits of Faiyum, dating from the early centuries AD. The technique fell into disuse in the 8th–9th centuries, being replaced by tempera and eventually oil paint ([Piva, 1991](#); [Chilvers, 2003](#)).

The first known use of wax for modelling was the sculpting of bronze and jewellery with the lost-wax casting process (*cire perdue*). This technique involves covering a clay or plaster model of the sculpture with a thin layer of wax; the wax is then covered with another heat-resistant layer, and the whole is heated to melt and drain off the wax; molten metal is poured into the cavity that the 'lost wax' has created (Chilvers, 2009). The process is illustrated in the scenes on the 'Berlin Foundry Cup', an early 5th century BC Greek cup ([Mattusch, 1980](#)).

The particular physical and chemical characteristics of wax, such as malleability, resistance to atmospheric factors and its ability to absorb paint, all justify the interest shown by individuals who chose to adopt this material to create a wide variety of figures and portraits. The high burning potential of the material explains the use of wax figures in magic rituals performed with an aim to destroy, e.g. voodoo dolls ([Ballestriero, 1996/97](#)). In pre-Christian Rome the ancestral portraits of the patriciate were set up in the atrium or in niches and carried in procession at a funeral accompanying the new deceased ([Pliny the Elder, quoted by von Schlosser, 1997](#)).

From pre-Christian times to the present day wax was also used for votive and *ex voto* images. The offering of objects to a divinity, or to a saint, to ask for a grace (propitiatory *ex voto*), or to give thanks for a received grace (gratulatory *ex voto*) is a very ancient custom; the objects were generally placed in places of pilgrimage, churches, chapels and shrines ([Antoine, 2001](#); [Chilvers, 2003](#); [Darvill, 2008](#)). Votive offerings could be of any kind but often reproduced parts of the human body, representing healthy or diseased organs. In Florence, from the 13th to the 17th century, the donation of votive offerings was so common that it created a veritable industry. Florentine and foreign nobles commissioned life-sized figures of themselves in coloured wax, which were dressed in their clothes and then offered to the church as an 'act of devotion'. These 'bóti', as they were known in the Florentine vernacular, were present in nearly all churches in Florence, but in the church of the Santissima Annunziata they became a major feature, turning the sanctuary into an enormous museum of wax figures of all types including body parts as well as whole figures. This practice ended in 1786 when the reforms made by Leopold II, Holy Roman Emperor from 1790 to 1792, ordered the clergy to free the churches of all votive offerings; the remaining waxes were melted down to make candles ([Lanza et al. 1979](#)).

The most important characteristic of wax for artistic purposes is its capacity to afford a remarkable mimetic likeness far surpassing that given by any other material. It is flexible, easy to work, can be coloured, and can be adorned using organic materials such as body hair, hair, teeth and nails. With the advent of Neoclassicism these very qualities made the realistic nature of wax models seem repulsive, and the practice of artistic ceroplastics started a slow decline. From an artistic point of view it virtually disappeared in the 19th century, surviving only in a minor way for votive uses (for example for the creation of *ex voto* objects and statues, at times containing relics, of saints and martyrs) and in secular waxworks such as those displayed at Madame Tussaud's Museum in London. In contrast, the use of wax modelling techniques for didactic and scientific purposes increased considerably for the study of normal and pathological anatomy, obstetrics, zoology and botany.

Ceroplastics and anatomy: the birth of the first collections of wax models[Go to:](#)

During the 16th century, renewed scientific interest in anatomy motivated Renaissance artists and physicians to study cadavers. Wax was once again found to be the most suitable material for artists to surpass the limitations of the two-dimensional nature of the drawing. Numerous artists used preparatory wax models on a reduced scale, for example Donatello, Michelangelo Buonarroti and Benvenuto Cellini. Ludovico Cardi, known as 'Cigoli', created a small statue of an 'écorché', which was of particular importance being the first known anatomical representation modelled in wax. This model, exhibited in the Bargello National Museum in Florence, is of extreme interest in view of the careful rendering of the external

musculature and because, being of considerably reduced dimensions, it was clearly not created from a cast of muscles taken from a cadaver (Ballestriero, 2007).

From the start, the study of the anatomy was characterized by problems associated with the difficulty of obtaining cadavers and by the understandable revulsion at having to dissect and examine unpreserved dead bodies, which was of necessity mainly confined to the winter months. In the 17th century, as anatomical studies became more scientifically based, a means of preserving the cadaver for investigative and teaching purposes was sought. The first attempts to use injection for this purpose were carried out by the Italian physician Marcello Malpighi (1628–1694), and the Dutch naturalist Jan Swammerdam (1632–1680), who used colourless or coloured preserving fluids composed of alcohol, mercury, different metals (including lead, tin, bismuth) and wax. The results of these trials were reasonable, although the preparations were not long-lasting and subsequently deteriorated. An alternative method of providing an accurate reproduction of the various organs of the human body was clearly required. Towards the end of the 17th century a collaboration between Gaetano Giulio Zumbo, a Sicilian wax artist, and the French surgeon Guillaume Desnoues resulted in the creation of the first realistic anatomical models made from coloured wax, representing a valid alternative to dissected human specimens. Wax gradually took its place as a material capable of allowing the creation of extremely realistic (as to form and colour) and long-lasting artefacts.

Gaetano Giulio Zumbo (or Zummo) was born in Syracuse in 1656 (Cagnetta, 1988). The scarce evidence available refers to the last 10 years of his life, following the official recognition of his art in Florence, when Cosimo III de' Medici, Grand Duke of Tuscany, took him into his service in 1691 (Giansiracusa, 1991). It is thought that due to his cultural and spiritual preparation (Zumbo was indeed an abbot) he initially undertook works of a predominantly religious nature. Subsequently, he became fascinated by death and disease, and turned towards darker subjects. He produced four highly realistic compositions known as 'Theatres of Death', which convey a general sense of decay and the precariousness of life: *'The Plague'* (probably inspired by paintings of the Neapolitan plague of 1656 by Mattia Preti, Luca Giordano and others), *'The Triumph of Time'*, *'The Vanity of Human Glory'*, and *'The Syphilis'* or *'The French Plague'*. In the works produced by Zumbo, both his tableaux and anatomical heads (Fig. 1), the sense of the macabre is invariably explicitly conveyed. His compositions clearly reveal Zumbo's interest in death and disease. These tableaux, still on display at La Specola Museum, Florence, portray destruction in minute detail and with a morbid attention to trivial aspects; death is illustrated as an event that suffocates and eliminates any vestige of beauty. Zumbo depicts, with a relish typical of his time, the process of deterioration of the flesh with the meticulousness of an anatomist and the taste for the macabre absorbed from the culture of Mannerism and the early Baroque.



[Fig. 1](#)

The Anatomical Head, G.G. Zumbo (Syracuse 1656 – Paris 1701), 18th century, Museum 'La Specola', Florence, Italy.

In 1695, after a short stay in Bologna, Zumbo moved to Genova, where he met the French physician Guillaume Desnoues (head of Surgery at the Hospital of Genova and professor of Anatomy and Surgery). Desnoues provided dissections from which Zumbo created anatomical models of coloured wax to be subsequently exhibited and sold. Following a famous argument in 1700 the two parted company; Zumbo moved to Paris where, supported by the court of Louis XIV, he collaborated with other dissectors in creating many more anatomical waxes until his death in 1701. Like the tableaux, these waxes were realistic and accurate not only in their anatomical detail but also in their portrayal of the early signs of decomposition. The accolade for having been the first to create such works in coloured wax in such perfect detail, thereby affording a valid alternative to the dissection of cadavers, must undoubtedly go to Zumbo: he took the art of wax modelling to exceptionally high levels, experimenting and perfecting the composition of substances used for colouring as well as the various mixtures of wax used by the artists of the period. Thanks to Zumbo, wax anatomical modelling evolved and expanded from Italy and France to spread throughout Western Europe.

By the end of the 16th century anatomical instruction had achieved sufficient status in Bologna that an anatomy theatre for lessons on cadavers and for public dissections was created within the newly built Palazzo dell'Archiginnasio. This was replaced in 1636 by a larger theatre in its current position. Anatomical wax modelling was brought into this world centre of medical teaching in the 1730s with the waxes of Ercole Lelli (see [Riva et al. 2010, this issue](#)). Lelli initiated the first collection of anatomical models for the express purpose of teaching. The other principal contributors were Giovanni Manzolini and his wife Anna Morandi. On the death of her husband, Anna Morandi continued modelling anatomical parts in coloured wax and went on to become an expert sculptress and anatomist. She became so famous that she was summoned to other Italian and foreign Universities; the Royal Society of London and the Empress Catherine II of Russia requested her services and invited her time and time again, but Anna Morandi never agreed to leave Bologna. Her wax self-portrait is on display in the Science and Art Museum of Palazzo Poggi alongside the anatomical waxes.

The waxes from Bologna created by Lelli, with reference to Osteology and Myology, together with those of the sensory organs, bowels and obstetric parts produced by the Manzolinis, probably constitutes the oldest known collection of wax anatomical models.

The art of wax anatomical modelling spread from Bologna to Florence, where the second great wax modelling workshop was created by Felice Fontana at the Natural History Museum 'La Specola', probably towards the end of 1771 ([Azzaroli, 1977](#)). When the workshop started up it could count only on the modeller, Giuseppe Ferrini, having as yet no dissector, and was supervised by Fontana, who initially had to take care of dissections. In 1773, Clemente Susini, who was later to take the Florentine art of wax modelling to the highest peak of artistic perfection, was admitted to the workshop as second modeller. Towards the end of the century the Florence workshop had surpassed even that of Bologna. Between 1771 and 1893 entire collections were created for La Specola Museum ([Fig. 2](#)) and for both Italian and foreign universities: they included models of anatomical parts (both normal and diseased), obstetrics and botany. The scientific and didactic value of these works is indisputable; the creation of entire collections of wax anatomical models was intended to facilitate the education of students of medicine. The possibility of studying anatomy by means of realistic life-sized wax models ([Fig. 3](#)) was undoubtedly of considerable benefit and adjunct to the anatomy manuals, whose two-dimensional illustrations were of limited use.



[Fig. 2](#)

View of one of the rooms, Museum 'La Specola', Florence, Italy.

[Fig. 3](#)



Detail, whole body specimen with the arteries displayed, XXV, 445. 'La Specola' workshop, end of 18th/beginning 19th century, Museum 'La Specola', Florence, Italy.

Acclaim for the Florentine wax modelling workshop soon spread throughout Europe. Emperor Joseph II, on arriving in Florence with the eminent surgeon Brambilla, was so impressed by the collection of wax anatomical models that he commissioned an even larger collection for the Military Academy of Medicine and Surgery he had founded in Vienna. In 1786, the collection was delivered to Vienna by mule and is still today preserved in the Josephinum Palace.

Between 1801 and 1805 the Sardinian anatomist Francesco Antonio Boi travelled to Florence to further his studies ([Cattaneo & Riva, 1993](#); [Riva, 2007](#)). Thanks to Boi's sojourn in Florence we have the Susini collection of anatomical waxes, made when he was at the height of his artistic skill; they are still today on display in the Museum Complex in Cagliari (see [Riva et al. 2010, this issue](#)). These waxes were produced later than the Florentine or Viennese collections, between 1803 and 1805; they are not mere copies of previous works, but are unique pieces, each signed and dated, for which a considerable sum was paid at the time.

The first serious attempt in England at introducing the art of modelling anatomical works from coloured wax was made by the sculptor Joseph Towne (1808–1879). Previous attempts had been made, although all noteworthy anatomical wax models that had been exhibited had been imported from abroad ([Wilks & Bettany, 1892](#)). In England cadavers were more readily available and were thus habitually used in anatomical studies; it was only following the regulation of the use of cadavers that an attempt was made to create anatomical models capable of replacing the former for teaching purposes. It is indeed quite likely that before this time no such need was felt. Joseph Towne worked at Guy's Hospital in London from 1826 to the time of his death. He is said to have created approximately 1000 anatomical ([Figs 4–6](#)) and pathological ([Fig. 7](#)) models from coloured wax, some of which were sent to India and Russia, amongst other countries.



[Fig. 4](#)

Dissection of head and tongue, mid-19th century; Joseph Towne, Gordon Museum, Kings College, London, UK.



[Fig. 6](#)

Dissection of head and neck, mid-19th century; Joseph Towne, Gordon Museum, Kings College, London, UK.



[Fig. 7](#)

Specimens of pathological anatomy: (A) Vaccinia; (B) Variola. Mid-19th century; Joseph Towne, Gordon Museum, Kings College, London, UK.



[Fig. 5](#)

Dissection of heart, mid-19th century; Joseph Towne, Gordon Museum, Kings College, London, UK.

Italian and English waxes, a comparison

[Go to:](#)

Over the centuries numerous collections of wax anatomical models were created throughout the world. It is due to their scientific, rather than artistic, worth that the wax anatomical models have been spared and have been passed down to us more or less intact. It is indeed no coincidence that these collections are still housed in hospitals or in the university faculties of medicine.

It is interesting to underline how the Italian anatomical waxes differ from models created in other countries, especially northern countries. Italian waxes are imbued with a real sense of beauty. The splendid Italian models of 'La Specola', Florence, are graceful statues that do not seem to belong in the dissecting room. Felice Fontana, the museum director, remarked that the models needed to be perfect and all defects removed [*L'interesse del R. Museo esige che sieno Levati tali difetti, e che i Lavori sieno perfetti*] (The interest of the Royal museum demands that the defects be removed and that the works be perfect) (filza Negozi, 1789 quoted by [Maerker, 2006](#)). As in early Renaissance art, the La Specola sculptures represent an 'ideal' body, and the faces show an 'ideal beauty' instead of the realistic representation of a specific cadaver ([Fig. 8A](#)). Fontana's dream was indeed to create anatomical models of scientific value for teaching purposes whilst removing the sense of repulsion produced by cadavers. In fact, wax anatomical models were initially created as an alternative to the cadaver to produce a three-dimensional atlas. To ensure that the collection of wax anatomical models could be used for didactic purposes even in the absence of an expert guide, Fontana applied to the top of each showcase a coloured drawing of the wax model contained therein and provided detailed instructions in the drawer underneath ([Contardi, 2002](#); [Poggesi, 1999](#)).



[Fig. 8](#)

Stylistic differences in portrayal of the face. (A) Detail, whole body specimen showing the lymphatic vessels of the thoracic and abdominal cavities; XXIX, 745, 'La Specola' workshop, late 18th/early 19th century, Museum 'La Specola', ...

Anatomical collections differ in style. They are usually very accurate from a scientific point of view but their artistic final result is specific to the country of provenance. Italian waxes are usually refined, pleasant, and everything that could provoke repulsion or disgust in the viewer is removed. Specimens from northern countries such as the UK, the Netherlands or Germany are usually more realistic, almost brutal, preferring anatomical accuracy rather than artistic flair. One of the major differences between the Italian and English wax models is the fact that the former are 'alive' whilst the latter are 'lifeless'. The Florentine waxes are, moreover, irrespective of the subject, remarkably attractive; bodies seemed to be alive, pulsating; statues had a gentle look, a languid gaze; the 'Venuses' had long hair left loose or gathered into seductive plaits and were often adorned by pearl necklaces... the English waxes merely reproduced cadavers (compare [Fig. 8A,B](#)).

Having deemed it of no value to embellish an anatomical model intended for use exclusively by the medical world, Towne's waxes are practical, crude, true to death; there is clearly a complete lack of any attempt to render the works attractive for the uninitiated. The pallor, the livid flesh, glazed eyes: all evoke the impression of being faced with a cadaver. The waxes created in the Florence workshop are lightly reclining on purple silk cushions and snow-white cloths edged with gold and silver, thereby enhancing the feeling that they are 'alive' and inducing us to worry about their 'comfort' ([Fig. 9](#)). The English waxes are roughly supported on wooden blocks (carved from the original block of wax) and their frozen grimaces locked in rigor mortis emphasize that cadavers used for dissection were obtained chiefly from executed prisoners.



[Fig. 9](#)

Detail, Whole body specimen showing the lymphatic vessels in the thoracic and abdominal cavities, XXIX, 746. 'La Specola' workshop, late 18th/early 19th century, Museum 'La Specola', Florence, Italy.

The wax models created in the Florence workshop were all provided with 'animated' eyes: coloured irises and candid whites give the impression of the eyes of a living person, or at the least those belonging to a still warm body ([Fig. 10](#)). They also represent magnificent works of art which, with their soft and at times sensual expressions, proved capable of attracting people to the subject of anatomy, eliminating the sense of disgust afforded by the view of a cadaver. This issue was extolled by Fontana who, on referring to a jointed wooden statue (never finished), stated: '... it will be of infinite use in providing a perfect knowledge of all organs of the human body, allowing all and sundry to learn without any feeling or disgust or hesitation the more intricate details of anatomy...' ([Fontana, 1786](#), quoted by Castaldi, 1947). The repugnance produced by cadavers was certainly not an issue taken into account by Towne: his magnificent and brutally realistic waxes are faithful copies of the cadavers lying on the dissecting table ([Fig. 11](#)).



[Fig. 10](#)

Detail, whole body specimen with the arteries displayed, XXV, 446. 'La Specola' workshop, late 18th/early 19th century, Museum 'La Specola', Florence, Italy.



[Fig. 11](#)

Basal parts of the head, with opened thorax and abdomen, by Joseph Towne, mid-19th century, Gordon Museum, Kings College, London, UK.

From an artistic point of view the Cagliari collection of waxes created by Susini towards the end of his life (see [Riva et al. 2010, this issue](#)) stands somewhere in the middle. Unlike the Florentine figures, including those made by Susini himself, the anatomical statues exhibited in Sardinia are 'lifeless': whereas the Florentine 'Venuses' resemble lavish dolls, the faces of Cagliari have glazed eyes and pallid cheeks. However, the most substantial difference is afforded by the uniqueness of each statue; their faces do not merely resemble idealized human beings but are real portraits. Far from the dreamy or sleepy gaze of the waxes on show in Florence and Vienna, the rigid faces of these waxes with their heavy eyelids and half-closed lips convey a sense of sadness. Being cadavers, no superfluous adornment or comfortable mattresses were required and they were therefore placed in simple wooden cabinets (finely made but with no elaboration as seen in the Florentine cabinets) and laid upon bare white sheets. Nevertheless, in contrast to the English waxes which brutally reproduce reality, the wax models exhibited in Cagliari are elegant neoclassical artistic forms corresponding to the predominant taste of the period.

Susini's work was not only appreciated by physicians and scientists: the renowned sculptor Antonio Canova (1757–1822) is reported to have expressed particular praise for the male statue representing the superficial lymphatic system ([Martini, 1895](#), cited by Castaldi, 1947), still on display today in La Specola. It is an acknowledged fact that the arts tend to exert an influence each on the other; as an artist Susini could not avoid being influenced by the neoclassical taste whereby the predominant perception of beauty was a smooth, refined and sensual expression such as that portrayed by Canova, who ironically was apt to cover his statues with a fine layer of wax to soften the coldness of marble.

Anatomical Venus

[Go to:](#)

During the 19th century the dissected anatomical statues of reclining women came to be known as 'Venuses', referring to the *Venus de Medici* created by an unknown Greek sculptor at the beginning of the 3rd century BC and on show today in the Uffizi Gallery in Florence. The generic term 'Venus' was later applied to any idealized female figure including those produced by prehistoric sculptors (see [Morris-Kay, 2010, this issue](#)).

In certain cases the scientific purposes of the anatomical waxes were just an excuse for depicting a beautiful, sensual dying woman. One of the most famous examples kept in 'La Specola' is undoubtedly the *Medici Venus* ([Fig. 12](#)). This sculpture was reproduced in different sizes and postures and there are numerous copies in Italy and other countries (Bologna, Vienna, Budapest, Barcelona). The name itself plays with the ambiguity of *Venus of Medici*, the most famous ancient work kept in Florence at the time of the Medici family, and *medici* being the Italian for medical doctors.



[Fig. 12](#)

Decomposable statue of a pregnant woman (The Medici Venus), 1782. C. Susini and G. Ferrini, Museum 'La Specola', Florence, Italy.

The *Medici Venus* lies elegantly on a comfortable mattress, her posture recalling classical sculpture and showing balance and harmony. Her pearl necklace could be read as a symbol of human vanity, but it also serves the purpose of covering the cut under the throat ([de Ceglia, 2005](#)). Wax

Venuses are, in fact, dismountable: the ventral body wall can be removed to inspect the organs underneath, and these, too, can be removed. At the end of the 'dissection' we discover that the *Venus* is pregnant and a fetus is present in her womb, but the discrepancy between her condition and her exterior appearance is astonishing. There are no exterior bodily alterations typical of pregnancy, the stereotype presented being as always a sensual young woman, with firm limbs and tissues and a lack of body fat. One reason was possibly the lack of information regarding the early stages of gestation; it was in fact not easy to have suitable corpses for the creation of obstetrical and embryological models and often it was impossible to know if the woman had been pregnant. Fontana and the wax modeller therefore relied on illustrations and the results were thus less accurate than the models copied from real cadavers ([Maerker, 2006](#)). The *Venerina* of Susini, displayed in the Museum of Palazzo Poggi in Bologna, is adorned with a necklace of pearls and her hair is collected delicately on her right shoulder. The model is more 'draped' than the Florentine one, the head falls back and the eyes are closed. This specimen is of particular anatomical interest, as described by [Mazzotti \(2010\)](#).

In the Florentine Venuses one feels in the presence of a beauty in agony, recalling the monument to the beata (blessed) Ludovica Albertoni, sculpted by Bernini in 1674 and exhibited in the Cappella Altieri, Church of San Francesco a Ripa, Rome. Female wax models are mainly represented reclined as in funeral monuments, but in comparison with Bernini's sculpture the analogies extend to the facial expression, somewhere between agony and ecstasy. In summary, the Italian anatomical Venuses express an idealization of the death agony of a young, beautiful woman, thereby capturing the essence of *Eros* and *Thanatos* ([Kádár, 1977](#)).

In Barcelona, another Anatomical Venus is displayed in the Museu d'Història de la Medicina de Catalunya. The sculpture was probably created between 1830 and 1850 by an Italian or French workshop. This small model represents one of the deviations of the anatomical specimens throughout centuries. It is the synthesis of art and pleasure, entertainment with the excuse of education. The sag of the reclining body and the open eyes, the elaborate hairstyle and the lavish jewellery, the prominent breasts and the reduced scale indicate more a sensual, sexual model, something capricious rather than a real scientific, pedagogic specimen. Whereas the eyes of the Florentine Venuses are open, with a languid dying gaze, and the Bolognese *Venerina* has closed eyes, representing agonizing, dying beauty, the Venus from Barcelona has fixed open eyes and a coquettish smile. Florentine Venuses are conscious of their role as open corpses and accept it quietly; they even seem to express a sadomasochist satisfaction, as Didi-Huberman pointed out in his book 'Ouvrir Venus' ([Didi-Huberman, 1999](#)). The little Venus of Barcelona seems unaware of her situation and expresses defiance to the viewer with her sensual and provocative attitude.

In the Faculty of Medicine at the Complutense University of Madrid there is another wax anatomical sculpture that resembles the Venus, though it may be more appropriate to call it the anti-Venus. The harmony, balance and beauty of the body here are completely missing; instead we have the expressionist style characteristic of Spanish culture. In a country famous for its hyper-realist wood sculptures (beautiful mourning Virgin Mary with vitreous tiers or dead Christ with bluish-green blood-stained flesh) there is no space for an ideal beauty, especially in the case of anatomical specimens. The Madrid wax is brutally presented though she sits on a lavish silk blue chair with her feet on a stool covered with the same precious material. The head, with closed eyes, reclines to the right and both arms are abandoned at the side of the body; no jewellery or elaborate hairstyles are presented. The model shows a heavily pregnant woman which is not dismountable and the abdomen is cut and opened in four parts, rather like the petals of a flower, revealing a perfectly formed baby. The statue is extremely realistic and depicts the characteristics of a heavily pregnant woman such as enlarged breasts, heavy swollen legs and adipose tissue.

Contemporary art, bodies of wax

[Go to:](#)

Nowadays wax is often considered an old-fashioned medium, fragile and not durable; artists such as the Australian Ron Mueck (b. 1958) and the Australian-based Patricia Piccinini (b. 1965) have turned to synthetic materials such as silicon, plastic and acrylic for the kind of artworks that would formerly have been created from wax. However, the beautiful 17th century anatomical collections demonstrate that, if kept correctly, wax is a very stable and durable material. Interestingly, some artists are again using wax as a medium for their creations and the main subject is often the human body, emphasizing the connection between it and the material. They include Maurizio Cattelan ([Rosenthal & Archer, 2000](#)), Gavin Turk ([Feeke, 2002](#)), Berlinde De Bruyckere ([Subotnick, 2007](#)), and John Isaacs ([Kemp & Wallace, 2000](#)).

Analysing these contemporary artists one can also see how, after two centuries, the approach to creating a wax body is still very different between northern and southern countries. The ironic, irreverent, provocative Italian artist Maurizio Cattelan challenges the limits of contemporary value systems, presenting his painstakingly realistic portraits of famous/notorious people in unusual, subversive situations: Hitler as a small child praying, Pope Julius II squashed by a meteorite, John Kennedy in a coffin, or wax sculptures of ordinary people like *Betsy*, an old woman crouched in a fridge, and *Frank & Jamie*, a couple of policemen upside-down. Leaving aside the irony and humour of his works, the sculptures of Cattelan always represent perfect, normal, bloodless bodies and the keystone is realistic resemblance.

In contrast, northern European artists work more on the body as an object to hide, open, dismember or deform. The Englishman John Isaac represented himself in 2002 in an enlarged, deformed self-portrait. He also created a formless mass of flesh which followed a previous work depicting an overweight human body squashed on a pavement. But if the body is not deformed it is dismembered and badly quartered, lying in a pool of blood. Similarly, no sign of piety is present in the sculpture by the Englishwoman Eleanor Crook. Her realistic representation of surgery in World War I left many visitors to the Hunterian Museum of London, where the sculpture is kept, disconcerted. The statue, perfectly accurate from the anatomical and surgical point of view, shocked for its unpiety realism and painful reality.

Deformed, tortured bodies are long-established elements of the northern tradition: from the Renaissance the idea of harmony, balance and beauty was a crucial key for southern artists, whereas in the North the expression of feelings and grief was one of the main characteristics of painters like Grunewald (c. 1475/80–1528) or Rogier van der Weyden (c. 1399–1464). Belgian artist Berlinde de Bruyckere continues the northern tradition, creating compelling forms that suggest distorted human bodies. Her suffering creatures are laid in glass cases, clinging to rusting poles or hung precariously from little platforms. Faceless and fragmentary, her figures transmit a sense of sadness and grief but also of delicate beauty.

Once again the human body is at the centre of attention: covered or exposed, perfect or deformed, completed or in pieces. Artists have turned to wax, as they did centuries ago, to obtain hyper-realistic results. As one of the fundamental characteristics in the art of ceroplastics or wax modelling is the possibility of creating extremely realistic and strongly evocative works, it is understandable that the spectator is rarely left indifferent. Wax representations of the human body are capable of producing a variety of sensations ranging from adoration to utter repulsion. It is this very aspect of the art that is fascinating: the ability to move the viewer, to charm or annoy in a way no other medium is capable of doing.

Conclusion

[Go to:](#)

Throughout the centuries wax has been used for creating mimetic likenesses, but its characteristics have led to it being considered a minor material, and the art of Ceroplastics as a mere craft. The realism obtained in portraits, Venuses and anatomical figures transformed wax into a

useful tool for representing human anatomy but, at the same time, distanced it from the world of major arts. Even in the 20th century, art historians such as E. H. Gombrich confessed to a feeling of unease engendered by the 'proverbial resemblance' of the wax image, 'due to the fact that it is situated outside the limits of symbolization' (Gombrich, 1960). This exclusion of wax artefacts from recognition as art has a long history: many wax modellers of the past centuries remain unknown because they were considered mere craftsmen; only a few are remembered as real artists.

Two such artists are Joseph Towne (Fig. 13) and his illustrious Italian predecessor Clemente Susini. Both had started to work as wax modellers at the age of 19 and had gone on to dedicate their entire lives to this art form: Towne worked for more than 50 years at Guy's Hospital in London, Susini for 40 years at the Museum of Physics and Natural History in Florence. Both had been trained from an early age in fine arts, and Susini was a member of the Academy of Fine Arts in Florence.



Fig. 13

Specimen by Joseph Towne, mid-19th century, Gordon Museum, Kings College, London, UK.

Under the authoritarian direction of Fontana (who personally inspected all waxes produced in 'La Specola' workshops), wax modellers were probably not allowed any degree of artistic freedom. But after Fontana's death, wax modellers started to claim ownership of their creations, first Clemente Susini and then his assistant Calenzuoli.

The Cagliari collection, for example, was carried out in a period during which Fontana was no longer involved with 'La Specola' workshops and indeed was nearing the end of his life. These waxes are thus solely the result of the wide experience of Susini who, probably in the absence of Fontana's strict supervision, had finally been able to express his artistic traits freely. With this collection one can certainly speak of the artistic maturity of Susini.

Nowadays the names Zumbo, Lelli, Manzolini, Morandi, Susini and Towne are not unknown and attract the attention of historians and art historians. The fact that some contemporary artists are using this peculiarly fascinating material confirms that some early anatomical wax models should be included in the category of 'Art'.

Acknowledgments

Go to:

The photographs for this article were taken by Owen Burke and Roberta Ballestriero, except Fig. 12, which was taken from the 'La Specola' website. I would like to express my thanks to the Museo di Storia Naturale, Sezione Zoologica 'La Specola', Università degli Studi di Firenze for kindly permitting the publication of the photographs of G. G. Zumbo and Clemente Susini's anatomical waxes. I gratefully acknowledge the Gordon Museum, Guy's Campus, Kings College London, for giving permission to publish the photographs of Joseph Towne's wax specimens. I am also most grateful to Prof. Alessandro Riva Department of Cytomorphology and current curator of the Cagliari Museum of Anatomical waxes, University of Cagliari, Italy, and Prof. Gillian Morriss-Kay of Department of Physiology, Anatomy and Genetics at Oxford University, for their constant help and support.

References

Go to:

- Antoine E. Ex voto. In: André Vauchez., editor. *Encyclopedia of the Middle Ages*. Cambridge: James Clarke & Co.; 2001. (e-reference edition). Distributed by Oxford University Press. Open University. 25 July 2009. Available at: <http://www.oxfordreference.com>.
- Azzaroli ML. La ceroplastica nella scienza e nell'arte. *Atti del I Congresso Internazionale*. Florence: Leo S. Olschki Editore; 1977. La Specola. The zoological museum of Florence University; pp. 1–22.
- Azzaroli Puccetti ML, Galli G, Scarani P. In: *Vanitas Vanitatum, Studi sulla ceroplastica di Gaetano Giulio Zumbo*. Giansiracusa P, editor. Syracuse: Lombardi; 1991.
- Ballestriero R. *La Ceroplastica Splendore ed eclissi dal Rinascimento al Romanticismo*. Academy of Fine Arts of Venice; academic year, Unpublished Thesis.
- Ballestriero R. *Realidad y Representación en la Ceroplastica*. Faculty of Fine Arts, Complutense University Madrid; 2000. MPhil Project.
- Ballestriero R. The art of ceroplastics. Clemente Susini and the collection of the anatomical wax model of the University of Cagliari. In: Riva A, editor. *Flesh & Wax. The Clemente Susini's Anatomical Models in the University of Cagliari*. Nuoro: Ilisso; 2007. pp. 35–45.
- Cagnetta F. Gaetano Giulio Zumbo. In: Giansiracusa P, editor. *Gaetano Giulio Zumbo*. Milan: Fabbri; 1988. pp. 61–69.
- Cattaneo L, Riva A. *Le Cere Anatomiche di Clemente Susini dell'Università di Cagliari*. Università degli Studi di Cagliari, Cagliari: S.T.E.F; 1993.
- de Ceglia FP. *Journal of Science Communication*. Trieste: SISSA Medialab; 2005. I putridi, la sventrata, lo scuoiato. Immagini del corpo nella ceroplastica fiorentina del XVIII secolo; pp. 1–7.
- Chilvers I. *Oxford Concise Dictionary of Art & Artists*. Oxford: Oxford University Press; 2003.
- Contardi S. *La casa di Salomone a Firenze, L'Imperiale e Reale Museo di Fisica e Storia Naturale (1775–1801)*. Florence: Leo S. Olschki; 2002.
- Darvill T. *The Concise Oxford Dictionary of Archaeology*. Oxford: Oxford University Press; 2008.
- Didi-Huberman G. *Ouvrir Vénus, Nudité, rêve, cruauté*. Paris: Éditions Gallimard; 1999.
- Feeke S. *Second Skin, Historical life casting and contemporary sculpture*. Exhibition catalogue. Leeds: Henry Moore Institute; 2002.
- Fontana F. *Memoria del Direttore del Real Museo (1786)*. In: Castaldi L, editor. *Francesco Boi (1767–1855), primo cattedratico di anatomia umana a Cagliari e le cere anatomiche fiorentine di Clemente Susini*. Florence: Leo S. Olschki; 1947. pp. 484–500.
- Gombrich EH. *Art and Illusion*. New York: Pantheon books; 1960.
- Kádár Z. *La ceroplastica nella scienza e nell'arte*. *Atti del I Congresso Internazionale*. Firenze: Olschki; 1977. Sul profilo barocco della cosiddetta 'Venere dei Medici' di cera; pp. 525–531. Florence, 3–7 June 1975.
- Kemp M, Wallace M. *Spectacular Bodies: The Art and Science of the Human Body from Leonardo to Now*. London: Jointly published by the Hayward Gallery and the University of California Press; 2000.
- Lanza B, Azzaroli Puccetti ML, Poggesi M, et al. *Le Cere Anatomiche della Specola*. Florence: Arnaud; 1979.
- Maerker A. The anatomical models of La Specola: production, uses, and reception. *Nuncius: J Hist Sci*. 2006;21/2:295–321.
- Martini T. *Egisto Tortori e l'arte di modellare in cera, 'Rassegna Nazionale'*, 1895. In: Castaldi L, editor. *Francesco Boi (1767–1855), primo cattedratico di anatomia umana a Cagliari e le cere anatomiche fiorentine di Clemente Susini*. Florence: Leo S. Olschki; 1947. pp. 484–500. pp. 82.
- Mattusch CC. *The Berlin Foundry Cup: the casting of Greek bronze statuary in the early 5th century BC*. *Am J Archaeol*. 1980;84:435–44.

Mazzotti G, Falconi M, Teti G, Zago M, Lanari M, Manzoli FA. The diagnosis of the cause of the death of Venerina. *J Anat.* 2010;216:271–274.

Morriss-Kay GM. The evolution of human artistic creativity. *J Anat.* 2010;216:158–176.

Piva G. *Manuale pratico di tecnica pittorica*. Milan: Ulrico Hoepli; 1991. pp. 177–182.

Pliny the Elder . *Naturalis Historia*, 35.6. In: von Schlosser J, editor. *Histoire du portrait en cire*. Paris: Macula; 1997.

Poggesi M. *Encyclopedia anatomica*. Cologne: Taschen; 1999. La collezione ceroplastica del museo ‘La Specola’ pp. 6–46.

Riva A. *Flesh & Wax: The Clemente Susini’s Anatomical Models in the University of Cagliari*. Nuoro: Ilisso Edizioni; 2007.

Riva A, Conti G, Solinas P, et al. The evolution of anatomical illustration and wax modelling in Italy, from the 16th to early 19th centuries. *J Anat.* 2010;216:209–222.

Rosenthal N, Archer M. *Apocalypse: Beauty and Horror in Contemporary Art*. London: Royal Academy of Arts; 2000.

Subotnick A. *Schmerzensmann Art catalogue monographs*. Steidl: Hauser & Wirth; 2007.

Wilks S, Bettany GT. *A Biographical History of Guy’s Hospital*. London: Ward, Lock, Bowden & Co; 1892.