

# Artem Medicalis – My ouroboros journey in art and science

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## Abstract

*Artistic scientific research is, I believe, one of the ways out of the cul-de-sac that modern art brought us into during the latter part of the twentieth century. By returning to serious scientific and anatomical study, doors opened to a new discipline altogether. My personal journey as a medical artist took me from scientific wonder and intense interest in alchemy, through artistic anatomical research, on to functional medical illustration and back to conceptual art and sculpture. Having completed a course in forensic facial reconstruction I developed the idea of making a reconstruction of Andreas Vesalius's face. Thus, began a quest to find the lost grave of the great anatomist. We have not found it yet but have already changed history.*

**Key words:** medical illustration; medical artist; anatomy; facial reconstruction; Andreas Vesalius.

## The history of medical art and medical illustration

Eastern and Western medicine founded its origins in alchemy which was initially a fusion of chemistry, medicine, astrology, philosophy, spirituality, science and art. Anatomists used analogies of the universe to explain the body. Ancient Chinese illustrations and Arabic illuminated manuscripts might appear a little odd to modern eyes, as they were not based on direct observation, but rather on scholarship, and therefore the representation of the internal structures can have a rather imaginary appearance.

Functional educational medical illustration first appeared in Hellenic Alexandria during the early 3rd century B.C. Created on sheets of papyrus, Hellenic illustration included anatomy, surgery, obstetrics and medicinal herbs and plants. Anatomical figures were often gracefully positioned in landscapes amid pieces of classical architecture, in startling contrast to the clean and bare backgrounds of earlier and later illustrations.

The Renaissance gave us Leonardo da Vinci, the first medical artist in the modern sense. *Homo Universalis*,

inventor, artist and scientist, he melded a scientific understanding of anatomy based on observation with his extraordinary artistic talent. Not long after Leonardo died, Andreas Vesalius began his medical career and created and published *De humani corporis fabrica* possibly the best-known book of anatomy of all time. It influenced medical illustration for centuries. While much is known about Vesalius and the printing of the *Fabrica*, little is known about the artists who illustrated it, even including Jan Stephan von Calcar (a student of the Italian Renaissance artist Titian, who is considered likely to have created some of the illustrations in the *Fabrica*). In the 19th century, new printing techniques allowed illustrators to work in a variety of media. Colour printing was refined and became readily available, helping to make possible colourful atlases of pathology and anatomy.

In the 20th century, publishing became much easier and more direct with digital files and software editing programs both for text and illustrations. With easy access to the Internet, research is now at our fingertips, much to the great advantage of the medical artist.

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## Medical illustration – Medical art – Sci-art

It is mostly the difference of intent that distinguishes the medical illustrator from the medical artist and the contemporary sci-artist. A medical illustrator's intention is to communicate complex scientific findings through skills learned over many years of study, taking observations directly from cadavers in dissection rooms or taking notes and making drawings during operations or autopsies, working directly, and in close collaboration, with scientists.

As medical illustration is seen as a functional educational art form, with its main aim to be precise and clear and explanatory, the artistic expressive freedom is sometimes a little limited. A medical artist would seek to capture a more philosophic, sometimes even political communication, and must feel free to express these findings in any way found to be suitable. The distinction is made by the philosophy of the activity itself, one has to achieve the opportunity to absorb and relay the impressions of being confronted with one's own mortality. Again, this can only happen when one goes to the source and experiences these impressions directly, a medical artist has somewhat more artistic freedom, although the artistic research is steeped in sound scientific foundations. Having said that, there are many medical illustrations that can be truly called artistic masterpieces and many medical artists also produce beautiful medical illustrations, one does not necessarily exclude the other.

Medical illustration can be found in medical educational books, explanatory surgery books, hospital leaflets, posters, educational medical 3D models, teaching aids, courtrooms, forensics, facial reconstruction, etc., while medical art can be seen in museums, galleries and exhibitions.

Sci-art in the contemporary art world has increased in popularity over the years. Artistic research with the use of scientific tools and biological material is producing interesting and beautiful results. Quite a few art/science labs and research hubs have popped up all over the scene, one example where one can perform such artistic scientific research is in the lab of SymbioticA (1).

Artistic scientific research is one of the ways out of the cul-de-sac that modern art found itself in during the latter part of the twentieth century. By returning to

serious scientific and anatomical study, doors have opened to a new discipline altogether. This is enhanced by the arrival of new technologies, breakthroughs in physical science and the wealth of new materials now available. The future is once again very exciting.

## My ouroboros journey

My personal quest as an artist took me from scientific wonder and an interest in alchemy, through anatomical research (in dissection and autopsy rooms and labs and operating theatres) on to functional medical illustration and back to conceptual art.

I wrote the Poem "The Quick and the Dead" in 1998, when I was a medical art student. It was inspired by observing the dissection of cadavers at the University College London.

### *The Quick and the Dead*

*Mortal flesh and bone with benign fleeting soul  
composed grief-stricken structure  
I doth require your disengaged frame, your relinquished mould  
before this beautiful perfection mingles moist turf and oak  
and throwes of graveyard soil  
many brights have wrought  
and eyed upon thee  
and chalked eternal masterworks from thee  
bequeath therefore your strange intriguing tenements of clay  
to medic shaman and artist  
and behold  
as absolute awaits*

The process that I go through in my work, from casting organs, such as the heart and the brain, through to the finished sculptures is quite complex. It begins with careful planning, many hours of observation and it requires a certain amount of skill and artistry, which can take years of experimentation and experience to acquire.

It is said that the creation of an artwork is 1% inspiration and 99% perspiration, "great accomplishments depend not so much on ingenuity as on hard work" (Thomas Edison).

But the question arises – What is inspiration? I will try and explain my thoughts on this through my own creative process. Most works start off with a thought,

an idea, which might take a few years to mature, but the actual birth of the physical manifestation of this idea could be very quickly realized. Could it be then that the 1% inspiration arises, like the phoenix, out of a lot of hard mental slog in the quagmire of one's brain? My 1% of inspiration found its origin in dissection and autopsy rooms and labs and operating theatres. I have spent many years happily observing and drawing, and being totally immersed, with all my senses, in studying the body. My entire oeuvre consists of the study of both the anatomical mortal body and the nature of consciousness within this body, thus questioning what makes us human.

In 2007 medical artist Dr. Ann van de Velde Hematologist at the University Hospital Antwerp, Belgium and I organized the European Medical Artists, AEIMS (2) conference "Confronting Mortality with Art and Science". For the accompanying exhibition, and in collaboration with anatomist and elbow specialist Prof. Dr. Francis Van Glabbeek, (Orthopaedic surgeon and anatomist at the University Hospital Antwerp, Belgium) I created a wax sculpture (Figure 1) of a half-flayed man contemplating his own mortality by observing his dissected arm and biceps. He sits on top of two books representing Vesalius' "Fabrica" symbolizing that the anatomy of man has come to life. In 2010, as a spin-off of the conference, Ann van de Velde, Francis Van Glabbeek and myself founded BIOMAB (3). With this international association we organize dissection drawing classes, exhibitions, collaborative art/science projects, symposiums and conferences. Medics and artists can view the body from their own perspectives and this

gives rise to an interesting dialogue and many diverse works of art.

The following poem was written observing the contrast between life and death during one of the dissection drawing weekends in Antwerp University.

*Still here*

*The man in a white stillness zipped up encircled  
with nervous energy opponents  
the motionlessness serene absence of movement,  
moving us so deeply  
the non-beating of the heart  
making ours skip faster than ever.  
Limb by limb removed brought us together  
the afterbirth indeed emotions pouring out  
like the wrinkled soft pink skin curtain  
dripping clear red yellow orange deep greenish blue.  
Like the light shining through  
the melancholic afterbirth lyrical dark hue  
we are still here*

Medical artists are not only specialized skilled artist, they have to also have the passion of an anatomist, and translate the beauty they see in the human body into 2-D and 3-D artworks.

I know of no other artistic experience that comes anywhere close to the intense emotion one feels in holding someone's heart or brain in one's hands, with the understanding that they were once imbued with the vital spark of life. It is a humbling privilege indeed to witness the beauty of these visceral structures, the textures and colors in all their splendor.

The total involvement of all the senses, i.e. sight, hearing, smell, touch, give rise to strong feelings and emotions i.e.: sadness, fear, aversion, sometimes even anger, but also happiness, wonderment and surprise. These emotions form the building blocks of each work of art that I create. Imbued with such passionate emotions, they are on their way to becoming works of the heart, works of dedication. It is important however that the act of creation is conceived with sincerity, integrity and pure intentions, especially when dealing with the subject of death and the anatomical human body, as one can easily fall into the trap of sensationalism. Each work has to have its "raison d'être"



**Fig. 1.** Pascale Pollier, *Confronting mortality*, Wax, 2007, Antwerp Belgium; Photo: Ingeborg Van Dooren.



Having received a commission to sculpt a brain it was very important to me to observe and feel a real brain in order to know its consistency, weight, texture and shape etc. It is not enough just to observe with the eyes, one needs to feel with the hands also. Hands retain the memory of shape, and as a sculptor it is important to feel the subtlety and intricacy of the organ in order to really know and understand it.

On attending an autopsy, a brain was placed in my hands. I was surprised to find that it was very cold, for the body had been stored in a freezer overnight. The shocking realization that this brain had been full of thoughts the day before, and that I was holding somebody's whole life in my hands was a very humbling experience. I can recall that the brain looked pink and that it was healthy in structure. It was quite heavy and the arachnoid membrane held all the blood vessels and capillaries tightly in place. The structure of the cerebellum I found absolutely wonderful and beautiful and when it was cut into a sagittal section, the elegantly designed "arbor vitae" or "tree of life" was revealed. What a perfectly fitting name for a structure in the brain! I made the sculpture "Autopsy in a nutshell" (Figure 2) after the incredible experience of witnessing the brain autopsy that had such a profound effect upon me.

My major source of inspiration, however, was, and remains to this day, to be found in medical museums; the beautiful anatomical waxes displayed at La Specola museum in Florence, the Joseph Towne collection at the Gordon Museum in London and the medical

collection at the Josephinum in Vienna, to name but a few. You'll often find me in pathology museums (Figure 3) and medical history museums. I love to be part of this specialized profession and to continue the long tradition of anatomical wax sculptors.



**Fig. 3.** Still from the film *Fabrica Vitae*, 2014, Belgium, *Andere Wereld* films; Jelle Janssens. In the photograph: Pascale Pollier.

Wax is an excellent material for representing skin, muscles and the texture of other organic structures as it absorbs and reflects light in a very similar fashion. The oil paint on the surface is the finishing touch that brings out the textures, and almost magically, the effigy comes to life.

I also like to carve anatomy into a life cast and continue to anatomize it, very much as if I were dissecting a wax body, the only difference being that I don't have to find the anatomical structures... I have to create them. To do this I use scalpel and dental tools.

The sculpture "Female écorché" (Figure 4) is an



**Fig. 2.** Pascale Pollier, *Autopsy in a nutshell*, mixed media, 2006, Belgium. Photo: Pascale Pollier.



**Fig. 4.** Pascale Pollier, *Female écorché*, Wax, 2009, Belgium. Photo: Eleanor Crook.

example of this technique, and began as a life cast taken from my own body. I attempted to convey with this work that as an artist one must dare to rid oneself of the leather skin, the protective layer, the comfort zone and dare to stand vulnerable and alone, for hidden in this stance lies one's strength. For I hold very strongly to the belief that it is not the beauty of the art that is of paramount importance, but rather what the artist wanted to communicate and if and how this goal has been achieved.

### The quest of the grave of Andreas Vesalius

In 2009, I completed a course on facial reconstruction at the University of Maastricht. It was then that the idea developed to make a facial reconstruction of Andreas Vesalius. Not knowing where he was buried, but assuming it was in Brussels, my colleague Ann van de Velde and I went on a quest to find the grave of the great anatomist.

This quest took us to the Ionian island of Zakynthos, where the death of Vesalius has been an unsolved mystery for the last four and a half centuries. The cause and manner of his death and the exact location of his burial site have not been ascertained. We sailed to Zakynthos and embarked upon our quest.

Evidence provided by various researchers, including Belgian researchers Omer Steeno, Maurits Biesbrouck and Theodoor Goddeeris and Greek historian Pavlos Plessas, unquestionably point to the Santa Maria delle Grazie church in the city centre of Zakynthos. The church was completely destroyed by the earthquakes of 1893 and 1953 and any new effort to find the grave must therefore inevitably begin with the identification of the original location of the church.

The project "The search for the grave" was conducted in collaboration with Theo Dirix, taphophile and chancellor at the Belgian Embassy in Athens. First, a historical Geographical Information Systems (GIS), digitally registers, rectifies and analyses contemporary and historical maps, to try to identify the original position of the church that vanished under the rebuilt, contemporary city. In a second phase, we conducted a geophysical approach, employing non-destructive ground penetrating radar (GPR) and electrical resistivity tomography (ERT) methods. Stage three will be excavating the site, we plan to do this as soon as substantial evidence is found as to the exact location of the grave. I do hope we will find him

as I have not yet lost hope of creating a facial reconstruction of the skull of Vesalius.

2014 marked the 500th anniversary of Andreas Vesalius birth. I was co-organiser of the conference Vesalius Continuum and the accompanying touring exhibition *Fabrica Vitae*, "the fabric of life" (5). It was there I met geneticist researcher Vasia Hatzis, the curator of MEDinART (6). Vasia has been documenting and supporting the conference, exhibition and the search for the grave of Andreas Vesalius, my work and the work of many medical artists for several years.

In collaboration with forensic artist Richard Neave we created a new Vesalius monument (*Figure 5*), a two-



**Fig. 5.** Pascale Pollier & Richard Neave, Bronze, Zakynthos, Greece. Photo: Stelios Pettas.

meter bronze écorché, holding a skull in one hand, which is representing the search for the grave. To fund this monument, Richard and I made a sculpture of Vesalius's head, half reconstruction and half portrait and sold 15 bronze models to universities and private collectors in Europe, the UK and USA. The monument now stands on the island of Zakynthos facing the sea and is peering into the future with a handful of history.

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