Excerpts from article “Human Dissection – From Galen to the Great Revelations of Andreas Vesalius”

by [Elizabeth Roberts, MA, CPC](http://brainblogger.com/author/emroberts/)

**Galen’s Anatomical Influence**

The first of the great anatomists was Galen of Pergamon (AD 130-200) who made vast achievements in the understanding of the heart, the nervous system, and the mechanics of breathing. Because human dissection was forbidden, he performed many of his dissections on Barbary apes, which he considered similar enough to the human form. The system of anatomy he developed was so influential that it was used for the next 1400 years.

**Enter Andreas Vesalius**

Vesalius, who came from a line of four prominent family physicians, began as a young and precocious anatomy student. As a child, he would often catch and dissect small animals, and later as a medical student, he would go to great lengths to obtain human remains to study. At age 18, he entered the University of Paris, where they strictly adhered to the antiquated works of Hippocrates and Galen, and the medical professors thought it below themselves to perform actual dissections.

Vesalius and other like-minded anatomy students would raid the gallows of Paris for half-decomposed bodies and skeletons to dissect.

**Vesalius’ Rise**

His professors quickly noticed his great knowledge and ability, and by the age of 22 he was giving his own anatomical lectures, all of which centered on a dissection. Some of his subjects were animals, but more often than not they were human cadavers

The publication of his book De humani corporis fabrica (On the Fabric of the Human Body) stands as a monument in the history of science and medicine. Whereas his contemporaries relied on the antiquated accounts of Galen, who dissected animals rather than humans, Vesalius relied on the actual human body to inform his theories.

Vesalius’ work provided the first accurate description of the internal structures and workings of the human body, and more importantly, revived the use of the scientific method for studying human anatomy.

**Human Dissection – From Galen to the Great Revelations of Andreas Vesalius**

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Humans have been cutting open cadavers and dissecting corpses almost since the

beginning of recorded human history. Ancient Egyptians went to great lengths to mummify

their dead, including cutting open bodies, dissecting out organs, and preserving remains.

Following closely in their footsteps, ancient Greeks also pursued human dissection, in much

 more of a scientific vein. Rather than an immoral view of desecrating the human body,

Greeks thought of human dissection as an extension of the empirical nature of science.

Two early Greek physicians, Erasistratus and Herophilus made the first systematic,

scientific explorations of the human body, and they are now thought to be the first

physiologist and the founder of human anatomy, respectively. Together, these two doctors

advanced the study of the interior of the human body, which was once a sacrosanct

mystery, into a field of scientific query. Herophilus dissected the entire human body, and

 differed from the authority at the time, Aristotle, when he claimed that consciousness was

stored in the brain rather than in the heart. Erasistratus explained the workings of human

 organs in mechanical terms.

Unfortunately, the spark of empirical study of human anatomy that these two physicians should have set off did not light, as their two schools reverted to bickering over theoretical disputes. As if the fire of human dissection was not already flickering, it was snuffed out completely with the burning of the library of Alexandria and the widespread introduction of Christianity, when it became impossible to dissect human bodies anywhere in the Hellenistic world. This marked a great transition in the study of human anatomy, and for hundreds of years the European world valued the sanctity of the church more than scientific inquiry.

**Galen’s Anatomical Influence**

The first of the great anatomists was Galen of Pergamon (AD 130-200) who made vast achievements in the understanding of the heart, the nervous system, and the mechanics of breathing. Because human dissection was forbidden, he performed many of his dissections on Barbary apes, which he considered similar enough to the human form. The system of anatomy he developed was so influential that it was used for the next 1400 years. Galen continued to be influential into the 16th century, when a young and rebellious physician began the practice of using real human bodies to study the inner workings of the human body.

**Enter Andreas Vesalius**

Vesalius, who came from a line of four prominent family physicians, began as a young and precocious anatomy student. As a child, he would often catch and dissect small animals, and later as a medical student, he would go to great lengths to obtain human remains to study. At age 18, he entered the University of Paris, where they strictly adhered to the antiquated works of Hippocrates and Galen, and the medical professors thought it below themselves to perform actual dissections. During any actual demonstrations, the professor would lecture on high as a barber-surgeon did the actual cutting on the dissection floor.

Unlike Britain, in which only the bodies of executed murderers could be used for dissection by medical men, France’s revolutionary edicts made it easy for medically minded men to obtain bodies to study. This did not mean, however, that lowly students such as Andreas Vesalius would have direct access to any of these bodies.

Vesalius and other like-minded anatomy students would raid the gallows of Paris for half-decomposed bodies and skeletons to dissect. They would sometimes find the courage to go outside of the walls of Paris, braving the feral dogs and stench, in order to steal cadavers from the mound of Monfaucon, where the bodies of executed criminals were hung until they disintegrated.

Rather than considering dissection a lowering of his prestige as a doctor, Vesalius prided himself in being the only physician to directly study human anatomy since the ancients. During only his second anatomical lecture, Vesalius stepped onto the dissecting floor, took the knife away from the barber-surgeon, and began cutting at the cadaver himself, demonstrating his great skill with the knife.

**Vesalius’ Rise**

His professors quickly noticed his great knowledge and ability, and by the age of 22 he was giving his own anatomical lectures, all of which centered on a dissection. Some of his subjects were animals, but more often than not they were human cadavers. He also suspended a skeleton above the dissecting table during his lectures, and taught that the skeleton was the foundation of the body.

Similar to the influential works of Galen, Vesalius’ work on human anatomy revolutionized the scientific world. The publication of his book *De humani corporis fabrica* (On the Fabric of the Human Body) stands as a monument in the history of science and medicine. Whereas his contemporaries relied on the antiquated accounts of Galen, who dissected animals rather than humans, Vesalius relied on the actual human body to inform his theories.

Vesalius’ work provided the first accurate description of the internal structures and workings of the human body, and more importantly, revived the use of the scientific method for studying human anatomy. The birth of Christianity supplanted hands-on, empirical study of the human body with the philosophical reliance on a Supreme Intellect. This idea was that every human body part was a product of the Supreme Intellect’s design, whether or not it coincided with what actually lay out on the dissecting table.

Vesalius, on the other hand, could not support the ancient writings of Galen, who relied on this idea of Supreme design. Although he revered him highly, Vesalius often found that his study of the human form did not fit with the descriptions provided by Galen, whose descriptions often matched the anatomies of dogs, apes, or sheep. He eventually found over 200 discrepancies such as these, and publicly announced his break from the Galenic tradition.

**A Revolutionary Physician**

*De humani corporis fabrica*, published in 1543, was a turning point in the history of modern medicine. For the first time, the understanding of medicine and the treatment of disease was rooted in an accurate representation of the human body. This book revolutionized the medical world. Similar to the findings of Copernicus and Galileo, Vesalius’ works help spur an empirically-based, scientific study of the world around us.

Like his fellow revolutionary scientists, Vesalius’ masterpiece was met with harsh criticism. Many of these criticisms understandably came from the church, but the most strident of all came from Galenic anatomists. These critics vowed that Galen was in no way incorrect, and so if the human anatomy of which he wrote was different from that which was proved by Vesalius, it was because the human body had changed in the time between the two.

As a response to the harsh criticisms of his work, Vesalius vowed to never again bring forth truth to an ungrateful world. In the same year that he published *de humani*, he burned the remainder of his unpublished works, further criticisms of Galen, and preparations for his future studies. He left medical school, married, and lived out the rest of his conservative life as a court physician.

Even though Vesalius abandoned further studies of human anatomy, before he died he recognized the great contributions he had made to the scientific world. He understood that his revelations represented an awakening of inquiry into the human body, and a reliance on facts, rather than adherence to an antiquated text.

The remainder of the history of human dissection is just as rocky. Although France in the 16th century was open-minded about the use of human cadavers for scientific inquiry, the rest of the European world was not so revolutionary. Great Britain had its own tradition of illegal trade in dead bodies, and even the United States had a hard time opening up to the idea that human bodies should be used for scientific study.

**Resources**

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