

Science Assembly

In 1543, Andreas Versalius gave a lecture that changed medical science. It swept away centuries of wrong-thinking and received wisdom. It instituted an entirely new approach to learning that we benefit from today. His audience were not ignorant of the effect and the power of what Versalius was doing. They were astonished, thrilled and even a little frightened by what they were hearing. We know this because contemporary accounts survive the 471 years that separate us from that moment.

What did Versalius do? To a modern observer, it might have been difficult to grasp the significance of what he did. If you or I were able to back in time to attend that lecture we would see a steep-sided lecture room, with a young man at a desk. On the desk lay a scattering of bones, and a large open book. The bones were from humans and from apes; the book was Galen's treatise on anatomy, which had been the standard medical text for almost a thousand years. What Versalius did was to hold up the bones and read from the book, thereby proving beyond doubt that Galen, who had been relied upon by every doctor for centuries, was wrong.

Versalius had defied church authority, the power of academies and centuries of tradition. He did so by simply refusing to take what he was told on trust. As a scientist, he believed he had to go back to first principles – to test theories and examine the evidence. Before him, people simply relied upon the authority of Galen and never thought to actually do the research themselves.

Of course, Versalius wasn't operating alone. Fifty years earlier, an Italian called Niccolo Leonicensis wrote a book called *The Errors of Pliny*. In it, he comprehensively demolished the reputation of Pliny's *Natural History*, which had been the chief source of non-religious knowledge in Europe for 1500 years. Suddenly, scholars felt that everything they had relied upon, everything they thought they knew, was wrong and would have to be rethought. To their credit, they were more excited by the prospect than terrified. In the same year, 1492, America was discovered by Columbus, but the new intellectual territories that were being opened up dwarfed even the scale of the new world at the other side of the Atlantic.

Versalius and Leonicensis were part of a revolution in science. It was a time for young men who had no respect for their elders. Tough-minded, unafraid searchers for hard facts and clear evidence, they challenged and braved the counterattacks of the older generation and replaced revelation, holy writ and 'the way things have always been done' with what we now call science. It was the start of the modern age – and the stakes they fought for were high. Many scientists died or were tortured in defending what they thought was true.

I am speaking about what we now call the Renaissance – the rebirth. It is often presented as the rediscovery of the classical world, but is better understood as the rediscovery of scepticism and passion for enquiry – the refusal to settle for an easy belief.

And this change in the way people thought changed the world – it began that ever-increasing pace of change and development that has culminated in the civilisation that all of us enjoy today. The initial surge of development we call the renaissance was not in itself sufficient to get us where we are today. To it was added the reformation and the enlightenment. All of these movements had a common element, however. It was the desire to challenge orthodoxy – a refusal to accept what has not been proved, or what is not susceptible to proof.

But of course, all revolutions need to be sustained. No intellectual battle is ever completely won. We live in an age which enjoys technology more advanced than any previously known, medical knowledge unheard of in the past, a more complete knowledge of the workings of the physical world than ever before – and as a consequence our time is blessed as never before with health, wealth and extraordinary technological advance.

However, the forces that the scientists of the renaissance fought against have never gone away. Many of the candidates for election in America elections are proud to declare that they don't believe in evolution. A majority of Americans agree with them. An Afghan was recently sentenced to death for downloading an article on women's rights from the internet. All around the world, in every aspect of life, there are many who would wish to turn the clock back to before the renaissance and return to a world where you accepted something as true because you have been told it by an authority, where enquiry is discouraged as dangerous and where the dangerously free-thinking scientists are firmly put in their place.

We are a school that champions science. In a sense we are carrying the flag for the generations of scientists who fought to win our society the freedoms and the knowledge that benefit us today. So as we go about our learning, try to hold true to the ideals that motivated them all those centuries ago. Accept nothing as truth unless it can be proven; agree with no point of view unless you are satisfied it is supported by the evidence; don't believe something just because 'everyone knows it to be true.' And don't ever think that science is even a little bit dull – if it's done properly, science is just about the most revolutionary thing you can do.