

SAM: Good afternoon, everybody. My name is Sam, I work here in the Royal College of Surgeons, welcome. I'm delighted that we're marking the 500th birthday of Vesalius with such an esteemed speaker as Professor Vivian Nutton who we all know as a leading light of the UCL Wellcome Institute for the history of medicine as was, now Professor Emeritus, generally as you will know the go-to guy for medical history pre-1700 but even that doesn't do justice to his wide-ranging interests and editing. He is most famous perhaps for his work on Galen and on Vesalius, for his book *Ancient Medicine*, just out in the 2nd edition, but today I am delighted that he has taken pause in his whirlwind world tour of Vesalius birthday activities to talk to us in our little college about Andreas Vesalius of Brussels, 500 years on. Professor Vivian Nutton. (Applause).

VIVIAN: Thank you, Sam, for inviting me to celebrate Vesalius, among the surgeons. Vesalius, of course, was a surgeon, but he preferred to be called a physician. He is famous for one book, *De humani corporis fabrica*, on the construction, on the make-up of the human body, published in 1543 in Basle, a book which changed the face of how we think about anatomy, how we view the human body, and which remained and possibly still remains the gold standard for all books on anatomy. In this presentation, I shall be telling you a little bit more about the book, and I shall be showing you also some of Vesalius' own corrections that he made to it, in Vesalius' own hand. But to begin, let's have a brief biography. The important thing to remember about Vesalius was he was a courtier. His father had been a royal apothecary, his family had been in the court at Brussels for several generations, and his sister was also a courtier. He was brought up as the son of a wealthy courtier in the Netherlands. He studied at Louvain, he studied Latin and Greek, and here in the middle, at the bottom of the slide, you can see some of Vesalius' own scribbles in Greek, and in Latin. He studied at Louvain, which was the major north European university, for the new humanism, for the new Renaissance humanism, and by that I mean a group of people who saw that the way forward for them was in the revival of all the learning of the ancient Greeks and Romans, at first in language and literature, and then in medicine and science. But Vesalius was trained in Latin and Greek, and he wrote his books in Latin. He had an interest in dissection from an early age, he tells us, and he decided to become a medical student. He moved to Paris, which was the leading medical school of Northern Europe, in 1533-1536. It was a fortunate period. Because until 1527 or so, Paris had no interest in anatomy whatsoever, there was an annual anatomy, just. But suddenly, from 1527 onwards, all the members of the medical faculty suddenly became passionate in their understanding and in their practice of anatomy. One of them was a man called Guinther, Johann Guinther von Andernach, who was Vesalius' teacher and who wrote a short textbook of anatomy. Anatomy was all the rage in Paris, students and not only medical students fought to get into lectures. They climbed over walls, they trampled over gardens, they climbed through windows to see what was going on in the new anatomy. It smelt horrible. That is one of the things we know from one of the people who came to see and smell what was going on. After his graduation, he went back to Louvain briefly because there was a war breaking out between France and the holy Roman Empire, he took his first degree in Louvain, and then moved to Padua. It's in Padua, from 1537 onwards, that he begins his life as a university teacher, teaching anatomy, and he produces, in 1543, his great book. By 1543, he had also left Padua at least temporarily, to Basle, to see the book through the press, and then to find a post as doctor to the Holy Roman Emperor himself, Charles V. Many of you may wonder why one should give up an academic career at the greatest of all medical universities to become a doctor in Brussels. The answer is very simple. Doctor to the Holy Roman Emperor pays a lot more than a professorship in Padua. And Vesalius had the junior lectureship, moving to become a court doctor gave him money and it gave him opportunities. In 1555, he produced the 2nd edition of the *Fabrica* at Basle, and he remained in imperial service with Charles V and then with Philip II of Spain until 1564, when he went, partly on a pilgrimage, partly on a diplomatic mission, to Jerusalem and he died in Zakynthos in Greece on the way back, in 1564. Rather foolishly, because it means we only celebrate his birth and his death twice a year. Why is Vesalius important? Well, he is the first modern anatomist. The classical heritage of medicine is not enough for Vesalius. He transformed how anatomy should be performed. He introduced the visual into both anatomy and medicine. And he

is the first scientist, I think, fully to appreciate the power of the printing press to deliver a message accurately and in fair number of copies all the way around Europe. The Fabrica set the gold standard for anatomical books. Let's look at some of these things. The first is really how anatomy teaching should be carried out. For the previous 200 years or so, anatomy teaching had been sporadic, perhaps one anatomy a year in some Italian medical schools, but not always, and very rarely outside Italy. The professor spoke. He did not touch the corpse. That was left to those mechanics, the surgeons, the dissectors, and here is a slightly different image, somebody reading from Mondinos' book of anatomy, somebody cutting up the corpse and somebody on your left explaining. Vesalius abolished all this. For him, the teacher must dissect. Now, this is a message that went back actually to antiquity, to Galen and Hippocrates. Galen and the medieval period knew this, had said that you ought to dissect. But why, you might ask, did nobody follow Galen in the middle ages? The answer is very simple. That the Middle Ages did not have, in Latin translation, his works on anatomy, or even if they did, they were bowdlerised. In other words, everything that told you how to cut up a body was removed from the translation. Galen's medicine, as a physician, dominated the Middle Ages but from 1500 onwards, people became aware that Galen did not write in Latin, he wrote in Greek, and that there were new things appearing in Greek that had not been known, including anatomy. This is the translation into Latin of Galen's big book on anatomy, we call it in English: Anatomical Procedures, and you can see that at the bottom, there is an anatomy scene. Vesalius in fact edited, reedited Guinther's text for a publication in 1541/1542, and you can see, and I will translate what is under the title, it says: "This was turned into Latin by Guinther von Andernach and revised and extended by Andreas Vesalius of Brussels". Vesalius was brought up as a humanist doctor. But he immediately shifted his focus on what should be done at the very moment that he is writing, correcting these translations. He says "do it, cut yourself, dissect yourself", and the portrait at the frontispiece shows him dissecting what for Galen was the greatest work of the creator, the human hand. Look at the preface, that frontispiece, to the Fabrica. It shows Vesalius in the middle, dissecting, pointing, explaining, there's no book, there's a corpse, and what a corpse. It's a woman, probably the mistress of a monk, a nun who had failed as a nun. And Vesalius is in this image, he is also showing you that his book is (a) based on his own dissections, which is not quite true, and (b) that he will reveal the innermost secrets of the human body. He is doing this, and look at the audience. A massive audience, people from all ages, some of them crowding in. We don't know exactly who painted this, who drew this. We don't know exactly who all these figures are. They are clearly meant to signify something, and it's possible that the image turning away at the bottom right is in fact Galen, turning away from seeing himself being outstripped by Vesalius. This book had a message, it was that Galenic medicine is wrong. Galen's medicine is based on animal anatomy, animal dissection. Vesalius claims that he is dissecting humans. This was a shocking claim. Shocking in two ways: first, because Galen had said, "I want you to understand the human body by dissecting humans, if you can, if you find a body in a tomb, fiddle about and have a look", but he himself knew that he was having to rely on animals. So followers of Galen were just annoyed at this insult to Galen, this takeover of Galen, and they were also annoyed because, as a man called Niccolò Massa said, Vesalius was really doing nothing new. And true, the number of his new discoveries is really relatively small, and Massa said, "Look, we all know that Galen got it wrong, we all know that Galen has an error here, and something to be corrected there, and I would have written that book, anybody could have written it, I would have done it, unfortunately I have a wife and several children to keep up, and I am a physician as well, and I've got my patients, I just haven't got the time to get round to it". He did in fact write a book on anatomy which is in no way as good as Vesalius in every possible way. Massa represents the older type of medicine. But it's the book and the illustrations that have attracted most of our attention. This is a hand painted copy of the Fabrica from Fermo, in central Italy. A contemporary hand-painted copy. It is vastly different from anything that had gone before. Let's have a look. This book is in the Wellcome Collection. It's from an anatomy book which calls itself "The Anatomy of Galen", it's written in middle English for a London surgeon. It isn't Galen's anatomy, it's an anatomy of a pig. But here you have a typical illustration of a body with the names of the parts of the body. I think this is one of the most beautiful images. It's the nerves, nerve man. It's a beautiful image.

Hardly corresponding to reality. Because the aim of medieval drawings is not to teach you to see the body, but to teach you to remember the body, you learn the names, you learn what a body is, and then that's enough. At the same time, from 1500 onwards, we are getting artists who are interested in drawing not only the nude body but also in drawing muscles and bones. Of course, the most famous is Leonardo, who dissects with permission in hospitals, who is a friend of professors, who is a friend of scholars, and who has so many ideas, almost all of which he keeps to himself, that he never gets round to writing the things in public for the public, that we would have loved him to do. And with possibly one exception, most of the anatomists in the 16th century had no knowledge whatsoever of these drawings. Artists like Raphael and Michelangelo spent a good deal of time dissecting or at least drawing dissected bones and other structures. But their input into medical books is almost nil. This is one of the few illustrated books on anatomy in the early 16th century. It's a very schematic picture, and there's a text which allows you to read what's in the picture. But it is also not in any way life like, and even worse, it's put almost in an appendix at the end of a very thick book. If you wish to read 400 pages on anatomy, you may, but the pictures take up the last 10 pages or so. It's Vesalius' eye that makes the difference. It's Vesalius' attitude to printing that makes the difference. From the moment he goes to Padua, he arranges for drawings at his lectures, and we'll see some of his drawings later. He arranges for pictures to be copied by the artist Jan van Calcar, indeed these anatomical plates were paid for in part by Calcar. Students could have them, they could circulate for the benefit of students. For the first time, students were told to view the body. When he published in 1543 the *Fabrica*, he accompanied it with an *Epitome* for students, in Latin and then in German translation, so that students could get the new message. Why? Because they couldn't afford the big book. The equivalent - it probably cost about £4,000, £5,000. The *Epitome* cost £5 or £10. The *Fabrica* is a luxury production. The *Epitome* is for students, and students used it and it fell to pieces, so there were very few copies of the student guide in existence. These student, if you like, images are then transferred by other people for their books, this is a famous book by Thomas Germinus, produced in London in 1553, where the pictures are taken from Vesalius' *Fabrica*. Vesalius has a keen eye, a keen interest in art. Now, I don't expect you perhaps, certainly those at the back, to be able to see what Vesalius saw. I could hardly see it on the printed book. But Vesalius notes that there is a little white space, as a result of a mistake by the block cutter, and he says when he tried to make the letter u clear and thin, he cut away the tendon at a point between u and s. Incredibly difficult to see. I could only see it when I looked at it with a magnifying glass, and when blowing it up on the screen. These are the notes that Vesalius wrote in his copy of the 1555 edition, and as you can see, he addresses the actual block cutter and the printer, so he was intending a 3rd edition of the *Fabrica*. A remarkable achievement. It is a book which manages to do something new. There is only one book printed in the whole of Europe before this date that can compare with it, and that is also produced in Basle, by another publisher, Isingrin, in 1542, and it is a herbal, with plants drawn from life. This is the only book that can compare with Vesalius, of that date, in the quality and in the detail of its illustrations. The *Fabrica* is a remarkable book. Because it manages, in 1543, to solve many of the problems of putting on to a book, a two-dimensional thing, the three-dimensional human body. Vesalius has an artist's eye. He works with artists, he knows artists, a Belgian artist is actually one of his executors. And he somehow manages to see things in a new way and talk with the printer, Oporinus, about how to achieve this vision of the new body. Let's look at some sample pages. On this page, we simply have a list of some bones. They are so that you can, as the Latin at the bottom says, so that you know what Vesalius means by technical words. But if you look at these images, you can see how they are shaded to give you an idea of that three-dimensionality of the bones. Or take the bones of the neck, I think this is a wonderful page, in which Vesalius manages to give you an idea about how the bones fit together. He takes them in different ways. He looks at them from the front, from the back, from the top, from below. He has an eye, and later on, when he does the revisions to the 1555, he spends a lot of time trying to get the right word to describe a bone. Is a bone big? Or large? Not much difference. But if you say the bone is broad, or the bone is heavy, or it feels smoothish, it feels rough at the top, Vesalius is trying in his 1555 notes to explain in words what he has already said in pictures. Here is the skull, seen from various angles, various descriptions. Other people

had preceded him, but no one had preceded him in such clarity of drawing, or in showing so much of the bones of the skull. And what about those famous musclemen? If you remember, I showed you those nice Wellcome London illustrations. How different from here. This is a body but in a sense it has life. Look at that awful expression of the finally, if you like, dissected muscleman. This is tragedy, and Vesalius' musclemen are seen as moving. There is something about life in them, that is not there in those earlier illustrations. They are also in a landscape, in an Italian landscape. There is a message in the landscape at the foot of the pictures. There is a message that says: these were alive and in a sense they are alive, they are raising their hands, they are moving. These lived like we do. And there is a sort of frieze that runs along the bottom that begins with the Greeks and Romans and goes through this lovely landscape and ends in death and destruction. There is a message there. The plates, as you can see from the copies at the back, and have a look at them at the end of this lecture, are big. They occupy a large space, larger than any previous anatomical book. You can see things, just compare that with a contemporary of Vesalius, Charles Estienne. His book on anatomy was probably written about 1539, but didn't actually appear until 1545. Here we have anatomy which we know was drawn from dissection, but by the time you put it into these wood cuts, it becomes almost invisible. Just contrast the relative clarity of Vesalius' image with this tiny woodcut. No wonder Vesalius claims in the frontispiece to tell you about the secrets of women. He does so as a representative of the new new anatomy. He is a young man. He is only 28. He is 27 when he wrote the book. He probably wrote it in about 18 months. It is an enormous task. Chunks of it, I'm afraid to say, he copied word for word from Galen without acknowledgement, but much of it is his own work, and he must have written it frantically over a very short period. But it's a book of art. Look at this male and female figure. In 1543, this was trendy. This is the new artist. Martin Kemp told us last week that he thinks that this is - Jan van Calcar, a northern artist, who adopts this new Mannerist way of displaying the body. How different from those medieval images that we have seen. Look at these images as the opening initials. This is a joke, Vesalius is having a joke with you. Vesalius is having a joke with you because you are intelligent. Because you are wealthy. Because you can appreciate the wit that sees Cupids acting as anatomists. Here they are flaying a dog. Here they are playing with bones. Including the tibia, and don't forget that the word "tibia" in Latin means "flute". It's a joke. It's intended for a cultivated audience. That can appreciate these subtleties, and as you can see, you have also got some of Vesalius' own handwritten corrections, from the Toronto Vesalius. This is such a beautiful image. It tells you a lot about how Vesalius wished his book to be viewed and understood. He spends his time telling you how to read the body. You read it in words, and then you read it in pictures. But unlike Deringario, who put his pictures well away from the text, here you have a continuous dialogue between words and pictures. You cannot read the pictures without also reading the words. That is unusual. That is really remarkable. And that is Vesalius. But let's look at some others of his drawings. This is one of the musclemen, and on the right-hand side at the top, you can see a few words in Latin. This is what they say: there has been a mistake by the cutter, so what you have to do, he says, is you insert a sliver of wood into the block on which you have carved the correct letters. Vesalius is interested in how the print shop works. He is interested in getting the best quality paper, the best quality designers. Or take another one. Where Vesalius redraws the outline of a toe that has been, he says, the cutter has made a mistake, this picture is faulty. And he makes a line to the point where he shows where the cutter has made his mistake, and in a very, very thin pen, and a very firm hand, he draws himself the outline. In these notes, there are several pictures by Vesalius, several drawings by Vesalius, and they show just how, if you like -- how he had the eye of an artist. I would also say he had the eye of an obsessive, because the Toronto notes are probably there are over 2,500 corrections. Think of that. I don't know whether you have published articles, books, many of you have. Have you gone through everything in that detail again and again? Would you note a full stop, that has been put there wrongly, instead of a comma? Would you have noticed a little block like that? No. Vesalius is obsessed with getting it right. He is obsessed with getting his message through to you. He is obsessed with emphasising the importance of the visual in anatomy. Now, we might think it's an obvious message. We are used to it. Contemporaries were not. There was an edition published at Lyon in the mid 50s for students, which removed almost all the plates of Vesalius. And what about his

successor at Padua? Realdo Colombo published his book on anatomy in 1559 and look what we have on the left-hand side of the screen, an artist drawing the dissected body. Turn the pages, and what do you find? Not a single page has got a plate. Or take another famous example, Eustacius. His drawings were not printed for a long while. For the most part, anatomists continued to teach by words, along with Vesalius' plates, but he set a standard that few ever achieved, one can think of Albinus or Hunter, but we are in a very, very small minority. I'm going to end with this picture, because it sums up in many ways what Vesalius is trying to do. He's trying to give you a new view of the body. He wants to give you a view of what it is like to be alive. He wants to give you a view of the body that transcends that nasty bleeding smelly corpse that you see in front of you. For him, as for Galen, the human body was a great work of the Creator. For Vesalius, as for Galen, it wasn't just enough to know what bones are. One had got to know also how the body fitted together, how it worked, how it functioned, why things were there. And you could only do that by looking. You could find it out in a way by reading. But it was only when you examined the body itself and in plates of this quality, that you could fully appreciate what Vesalius' message to you was. And it was the human body is a wonderful thing, and it is a privilege, if not a duty also, that we should use dissection, anatomy, to investigate it. Thank you. (Applause).

SAM: Thank you very much, Professor Nutton for a learned but lively talk, I am sure you will agree, and I was delighted that we were privileged to new research on Vesalius there, you heard it here, folks. And I know that we'll be bursting with questions, at the front here, in the hat.

FLOOR: Is there any evidence that he engaged in experimentation in order to establish the nature of the function of the body, of the organs and so on? We are concerned here with dissection, which you might regard as a form of observation, but did he actually, do we know, experiment, and briefly also, do you think he might have had Asperger's in relation to his obsessiveness.

VIVIAN: Let me deal with the last one. No. In the sense that when we have information on his later life as a courtier, people commented on him as being rather chatty dinner companion and people seemed to like Vesalius, he has many friends, so he is not quite the Asperger's syndrome that you might think. As for experiment; well again, it depends what you mean by experiment. He does repeat some experiments on Galen - that Galen had done on the pig, for instance. And the end of the book, where there is more Galen than you might imagine, he repeats what Galen says about experimentation. About cutting and ligating the spinal cord at various points to see what effect that has on the body, when he ties and then cuts nerves. That is a Galenic experiment, and Vesalius says he repeated it. But there is no evidence for him actually carrying out experiments in the way that Harvey or Fabricius were to do. He is less a - he investigates function but his conclusions are largely those of Galen. What he does do though is by saying that you really have got to investigate the human body, and it's somewhat different from animals, he lays the way open for the next generation, Fabricius and then we come on to Harvey, who would dissect a human body, but carry out massive, massive experiments on animals. So what he is doing, in a sense, is saying: in order to find out how the body works, what it does, you were going to need animals. You can't just cut up people. However much you might want to try! But what you have to do is know the human anatomy and that will tell you a good deal about how it functions, and you then can go on to that sort of experimentation.

FLOOR: At that time, do you think he would have had any problem with the established church, like Galileo did?

VIVIAN: None whatsoever. Indeed, it was almost the other way around. And in the Middle Ages, there is no problem with the established church either. There is no evidence for the church forbidding anatomy. That's a 18th century invention. I can give two very simple examples. The first is when the university of Tubingen is established in the late 14th/15th century, the Pope gave special permission for an annual dissection. And my second example is also from

Germany, from Wittenberg where there is a fascinating anatomical tradition that goes back to the Fabrica. It goes back. In the end of the 16th century, there were two famous anatomists called Salomon Alberti and Johann Jessen and they wished to carry out anatomies on condemned criminals. The ruler of Saxony said yes. The university authorities said yes. The church authority said yes, please. Because actually, at Wittenberg, anatomies were compulsory attendance for every opportunity, whether they were theologians or medics. Who raised objections? The governor of the town jail, because he was the person who had to hand over the corpse, and he was scared that people might object and attack him. And that's why, when we have the detailed accounts, we have them from Rome, Milan, Venice and elsewhere, for those people who were publicly anatomised, almost all of them are male, single, immigrants. You do not cut up somebody who comes from your region. And the surgeons in Rome said, "Oh good, we are just about to execute a man from Milan!" because it's dangerous for you, because people would on if you cut up one of their relatives. If they don't know who it is, if it's somebody from abroad, fine. And also they are criminals. And as long as they are given Christian burial, that the bones, the bodies, all the bits are put back together and given a Christian burial, that is all the church is interested in. The church is happy to approve this.

FLOOR: Is there any historical evidence that Vesalius actually saw any of Leonardo's paintings or are there any paintings that you have noticed which seem rather similar in their format?

VIVIAN: The one person who does seem to have knowledge of Leonardo is Beringario, which is 30 years before. It is very difficult to see how and where Leonardo could have gained access to them. They were in Florence, or they were outside Florence at the time, and Leonardo doesn't go - only goes once to Florence, but that is after, I think, the Fabrica. I may be wrong. There's no - and the way in which he thinks about anatomy is so different from Leonardo that - Leonardo is an anatomy of mathematics and movement. Vesalius is - in one sense, an anatomy of the eye, looking at it. I just don't think there's any parallel there. The closest may be some of his people who are in Venice and some of the artists who have been looking at bones and have been drawing human forms quite accurately for the previous 50 years, and I think it's them - it's his association with them rather than with Leonardo that in fact influences that artistic side of the Fabrica.

FLOOR: You might not know the answer but I'm fascinated about why he went to Jerusalem, also because I am a gossip, I want to know with Mrs Vesalius, I have never heard about her, did she exist? And if not, why not?

VIVIAN: Let me deal with the first - there is a long debate about why he goes to Jerusalem. The evidence from the Spanish archival documents is that he goes there for private religious reasons. He is, after all, a devout Christian. He also goes as the representative of Philip of Spain to hand over the annual sum of money for the upkeep of some of the holy places. There is a story that he goes there to - out of - to do penance for some crime, but that is a much later story, and if it was penance, well, the King of Spain doesn't know anything of it. There is a further possibility also that he was fed up with Spain, he had been there since 1559, and there are indications that the Spanish court did not like Vesalius. He comes from Brussels, he is a foreigner. It is just possible that he was negotiating to return to Padua, that's what a Venetian is saying. Now, one can have the decision to make the pilgrimage, with royal approval, and you meet somebody in Venice who says, "By the way, would you perhaps like to come back, we can give you a job", and so on, this is what happened to Vesalius on two other occasions, so we don't know, but he certainly goes for reasons of piety, I think. As for Mrs, we know he did marry a lady, she was a well built lady, there are rumours that all was not well in the marital home, they did have a daughter, and once Vesalius died, she married - she never went to Spain, she stays in Brussels. Perhaps waiting for husband to come home or perhaps rather enjoying the prospect of being without him for a while. Certainly when he died, she matters again pretty quickly. But she is - she marries again pretty quickly. But she is almost unknown in the story and the only impression we have of their family life was that Vesalius wasn't around all that often, he is on duty at court, he is off here, he is off there, he goes off -

at one point the Emperor sends what is the equivalent of a private jet to get him back, he says, "I want to send an armed escort as soon as I can", and somebody says, "Because we know that you depend on Vesalius". But the wife and the family seem to be partly out of the picture, and they weren't there in Spain with him.

SAM: Patient gentleman in the shirt.

FLOOR: Do you think there's any link between Vesalius' drawings and memento mori and the Vanitus genre of Dutch paintings?

VIVIAN: The answer is yes, some of these images would also recall the dance of death. They are less familiar in an Italian setting, although you find it, for instance, in Pisa, and it could be that some of the, if you like, impetus for these musclemen in sequence goes back to these Northern images of the dance of death. So I think it's very likely that there is some form of influence, but what it is is, of course, always difficult to predict. I think there are certainly Northern influences, but here, this landscape, for instance, is beautifully Italian, but the dance of death is certainly one of the possible influences on the way that some of the figures are depicted.

FLOOR: There is a whole argument about the artist, we know that he thanks Jan Calcar for these, but he doesn't mention an artist in the Fabrica. What's your theory?

VIVIAN: Until last week ... (laughs).

My theories are this: the first is that we are wrong to talk about an artist. There are several artists at work. There is the artist of the musclemen, who may be Calcar, but undoubtedly the person who painted, who drew the bottom, that frieze, is likely to have been another artist, because that's what artists did. If we go back to the frontispiece, which is a very different style, lots of people, lots of people together, done by somebody who has experience of massing figures together. At one point, I thought it was Titian, although Martin Kemp has recently suggested, perhaps with much better arguments than I could ever deploy, that it's an entirely different artist, who has come from Rome or Tuscany, where they specialise in mass pictures like this, and suggests that this is a man who came to Venice in 1540, and who did this. He also pointed out that Vesalius' head, both here and, if we go right back to the beginning, that first slide, is rather large. Is it that Vesalius was sort of suffered from achondroplasia? Or is it simply that another artist drew the head from a portrait, and then it was handed over and incorporated in the big picture? It's also possible that we have drawings by Vesalius himself incorporated in the Fabrica. Because in the Toronto notes, there are several drawings which are done by Vesalius, they are his drawings. We know he used his own drawings in his lectures. I think there are probably about half a dozen images, schematic, that go back to Vesalius himself in the Fabrica. So there is probably five, six, seven, but we don't know for certain any name. Calcar is mentioned later on by somebody, and that may be right, he may have done some. But who these artists are, we don't know, and unlike Leonhard Fuchs when he did that herbal, Fuchs at the end has a lovely picture of the artist and the two people - the two artists and the person who did the wood blocks. We know who did that. All we know about Vesalius' contacts with the production processing of the pictures is that we know the name of the Milanese Carter who took the blocks from Venice across the Alps. One of the great unsolved mysteries, and we will leave that to our successors.

SAM: On that, ladies and gentlemen, I must with regret draw this fascinating conversation to a close, I know there were more questions lined up, I would ask you, if you have a moment, to have a look on your chairs and to complete the evaluation, both for RCS and for STAGETEXT. I would invite you to have a look at the treasures - the Vesalian treasures from the library that we have brought up for your perusal at the back. I would like to thank a number of people, of course, to Geraldine and Vida for getting the exhibition out of the back. To Jane and Hayley for organising

us so well. So yourselves for your excellent questions and rapt attention and I invite you back to give us similar attention during our First World War series, on 14th October. I would like to that our STAGETEXT colleagues as well. And finally our speaker for today, Professor Vivian Nutton, thank you very much indeed.

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