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DOUG FABRIZIO

Thank you for doing this.

DR. ANGELINA WHALLEY

Thank you.

DOUG FABRIZIO

First of all, how do you describe what it is you're trying to accomplish with an exhibition like this? What is it about? What are you trying to do? How do you describe it?

DR. ANGELINA WHALLEY

I'm a physician by heart, and I feel most rewarded when people, after seeing the exhibition, feel inspired. If they have a much better understanding of what, what means to be human, what they are like, what...how intricately the body is made, and at the same time, how beautiful it is. It's worthwhile to strive for a healthy lifestyle. So, my goal is to provide people with the necessary knowledge they need to strive for a healthy lifestyle.

DOUG FABRIZIO

It seems like this idea of beauty is important to you...that the form of the body is beauty and they're presented in a way, it's not wrong to say it's art in some ways. Right? How do you see it? Is this an artistic presentation in some way?

DR. ANGELINA WHALLEY

First and foremost, we are anatomists and physicians. So that is our main goal that we're striving for. But we learn from our visitors that it is absolutely essential for the overall exhibition experience to have the specimens very lifelike so that

they are relevant to our visitors. That they are appealing, they are beautiful. We learned that the more dramatic, the more they look like they are frozen in a particular movement, they are more awe wakening and it...are more intriguing to the visitors. So we regard ourselves primarily as scientists embracing art, but not as artists embracing science.

DOUG FABRIZIO

Tell me about where...you're husband developed this concept originally. How did he come to the idea? Can you tell me how it evolved as an idea of...not just the plastination process, but the idea of presenting the bodies to people in this form?

DR. ANGELINA WHALLEY

My husband invented the technology back in 1977, and it took him many, many years of his life to further develop the technology to make it what it is today. And it was not meant at all to become a public display. It was meant to facilitate teaching anatomy at university. So, whether we went to anatomy congresses or like, we always experienced that lay people were extremely interested and, you know, the cleaning ladies or the housekeepers they called their family members and said "you really have to come over and see that." But it did not necessarily come to our eye yet to go public with it. And so, it happened that in 1995 we were invited by the anatomical society of Japan to be part of a public exhibition that they planned for this anniversary and about 70% [BAD BACKGROUND NOISE] of this exhibit contained our specimens and it was a tremendous success. The museum predicted about 150,000 visitors in 4 months, but in the same time 450,000 people came. People were standing in line for hours just to get in, and it was so overwhelming, all the experience that we had, particularly from the visitor experience. You certainly know when...you have ever dealt with Japanese, they are so self-controlled, as a westerner you would hardly be able to predict what they feel, but inside the exhibition it was as if all masks would have fallen down. And I had in particular a very moving experience with a young woman, she might have been in her mid twenties, her end of twenties, and she was in tears approaching me, and she said "I'm so thankful that you gave me this opportunity to see this, because I attempted suicide three times in my life. I always felt useless...nothing worse. But now seeing this, I realize that there is something very wonderful inside of me, that's so intricately made. And I promise you, I'll never do that again." And, even if I think of her today it causes me goose bumps. But at that very moment I felt that it is absolutely essential to stay with this idea, and to bring the exhibition to the people, wherever there is interest in it.

DOUG FABRIZIO

You hear this question from time to time. Why use real bodies. Why not make synthetic models or something like that. What's important about people seeing an actual body? Why is that important?

DR. ANGELINA WHALLEY

I think it is only natural that authenticity is causing this, all inside of you. A plastic model can never do. And it is the same as if we had one fully printed art catalogue compared to the ability to see the real artwork. It evokes emotions. And so do the specimens. Nowadays, teaching possibilities are as good as ever before. 3-d animations, plastic models are really good quality, but they are digested so to say, in somebody's brain. One model is the same as the other. You would never be able to show this uniqueness. Every...as we are looking unique from the outside; we have an anatomical uniqueness inside our bodies. So heart of one person does not always look exactly the same as the other one. And this is what you realize also here inside the exhibition.

DOUG FABRIZIO

Do, where do the bodies come from?

DR. ANGELINA WHALLEY

We have set up a very special body donation program back in 1983 because we felt, just because of the fact that the bodies were permanently preserved, the family members would not have a grave to go to, it is mandatory to have people's agreement to that, and when we started the public exhibition, we extended this body donation program by asking our body donors "would you also be prepared to be on public display?" And I can let you know, I think it's at 98% that are happy to be part of the exhibition.

DOUG FABRIZIO

So do you mind talking about your husband's affection for Leonardo Da Vinci?

DR. ANGELINA WHALLEY

I think the experience we had in our very first exhibition was very decisive for whatever we did afterwards. And that was due to the reaction of our visitors. The first specimens, the first full body specimens we had on display, they were designed to teach university students. So they were very straight, like an anatomical model. And visitors said, "it is very interesting, but at the same time, they look a little ghoulish. They look so dead. And we immediately were reminded of the old renaissance artists, and were reminded by the beautiful drawings that are left behind from that time. And you see nicely dissected bodies in very natural positions, and even sometimes put in a beautiful landscape. And we understood, yes! To appeal to lay people, we have to strive for the beauty and the aesthetics. And therefore, we feel that body worlds, is firmly set in the tradition of the renaissance anatomists and artists.

DOUG FABRIZIO

Do you ever think, you and your husband, that you're up against some of the same kinds of obstacles that some of the renaissance artists were up against. da Vinci, for example, had to deal with cultural and religious taboos related to the body...people seeing dissection as a desecration. Do you understand what they went through? Have you had to cope with that as well, as this exhibition travels and as you present it?

DR. ANGELINA WHALLEY

Indeed, I can fully understand it, because they went through this process because society were not used to that. it was not practiced. But now, fortunately enough at that time of European history, the human body was exalted for it's beauty and seen as illumination of self. and therefore, it happened that autopsies took place also in churches, because it was also regarded as a view into god's work. so after the anatomy was discovered by the artists actually and took over by the scientists and gradually anatomy got hidden in the ivory towers of universities. So it was not a self-understanding; it was not natural to have public autopsies or human specimens on display publically. So it was forgotten. This tradition was forgotten. and now we come up and revive this whole history and experience the same reaction. So once people know about the teaching possibility that we have, the educational value of it, people really appreciate it. And now that we travel with the exhibition for a number of years now, and people have learned of the benefits, it is highly accepted nowadays.

DOUG FABRIZIO

How do you treat, do you treat the bodies with a special kind of reverence because they are in fact a human body? That is seeing them as something other than an object in an exhibition. do you treat them with a kind of reverence or is that a weird way of saying it because this is a scientific presentation as much as anything?

DR. ANGELINA WHALLEY

It is not weird at all. the body to us is really an anatomical treasure, and we have a really close relationship to our body donors. We are absolutely grateful and respectful regarding their decision; without their generosity and their willingness to teach future generations, we would not be able to do that, to achieve that. And whenever a body comes to our institute we really treat it with utmost respect as we would do with our own family's bodies.

DOUG FABRIZIO

Can you say something else about that relationship? You don't give them names or anything, but you feel as if you know them. They're...how would you describe that relationship?

DR. ANGELINA WHALLEY

well we have at least every two years we have a body donor's meeting. Mostly it takes place in our laboratories or sometimes it takes place on our exhibition site. And we invite all of our donors to come with their family members to see what plastination is, to see what the new developments are, to also ensure that they know about their decision and to give them the opportunity to rethink about it, and that they feel confident with their decision, and so there's a lot of interaction and questions with the family members and the donors ask. and it's quite unique and very frankly relationship that we have with our donors.

DOUG FABRIZIO

would you...I know it's probably somewhat complicated and hard to explain, but would you take us through the plastination process? How does it work?

DR. ANGELINA WHALLEY

the principle is pretty easy. The principle is to exchange the tissue water and fat against the polymer by means of vacuum. and the polymers that we use are reactive polymers, like silicon rubber or epoxy rubber. and these polymers, they are known not to be mixable with water. So we cannot just put the specimen into a vacuum and do the exchange, it does need an intermediary solvent like acetone for instance, that is done in a way that we put the anatomically dissected specimen into the acetone, and due to the chemical gradient all the water will move out over time and the acetone enters the specimen. it takes a couple of weeks or months, depending on the size and kind of specimen, and after that, the specimen is entirely imbued with the acetone. And then we put that in a liquid polymer and apply vacuum. And then, in the vacuum, the acetone is extracted very easily and it soaks the polymer into each individual cell where just the acetone evaporated from. This vacuum process, for full-body specimens, takes around 4-6 weeks, constant vacuum, then we take it out and still have all the time we need to give it proper posture, put all the anatomical structures in its correct position, and then we cure it.

DOUG FABRIZIO

so by curing it, you set it in place. So the images we will see are...they're not flexible any more. That's their position?

DR. ANGELINA WHALLEY

That's right. curing means the cross-linking of the polymer. Normally, a regular polymer contains at least of two components, the polymer and the curing agent. and you normally put this together and you have a certain part-life, and after that the polymer is cured forever. But this does not allow a long process in time that we need. Therefore, we have developed a special technique to impregnate a specimen with just the polymer mixture, then put it to the curing agent in gaseous form only whenever we need it.

DOUG FABRIZIO

wow. So, how do you, as an anatomist and as a scientist, how do you describe the human body? do you think it's a...do you think it's extraordinary the way it's evolved, the way it's designed? Talk about it.

DR. ANGELINA WHALLEY

I think, to me, there's...when I look at all these specimens, it is still a wonder how all this functions and interacts. I'm particularly intrigued by the arteries that we have on display, and I feel although no tissue is left behind, it's just the arterial cast, to me they are the best representative of the human body because they look so beautiful but fragile. Very fragile at the same time. and if you mention this tiny network, if you would inject all the arteries, even the capillaries, it would be so dense that you could not look through. and if you mention that all the bodily cells need to fit into it to function, it's just...amazing.

DOUG FABRIZIO

I guess this is why people attribute to the body obviously, that it's a creation of God...some do. How do...part of the people who are drawn to it are, I'm guessing, are drawn to it because they see the human body as this miracle-like creation and there's a kind of...is it fair to say that for some who see it there's a kind of spiritual reverence in seeing how amazingly intricate, how amazingly complex, and as you say beautiful that it is?

DR. ANGELINA WHALLEY

It holds true indeed. and I think that is also the parallelity to the Renaissance anatomy. It was seen that time as a window into god's work. and if you listen to visitor's reaction or if you look into our comment books, you will often find the remark "this is the marvel of God's work." Indeed, so for many of our visitors a spiritual experience.

DOUG FABRIZIO

Do you think, for people, you see, as this exhibition travels, from time to time you hear some controversy that it, because these are actual bodies people feel

squeamish about it, or feel like the bodies in some way shouldn't be presented, human bodies ought not to be presented this way. What do you make of that? How do you react to that that you hear? I guess you hear that from time to time.

DR. ANGELINA WHALLEY

Well, I must say, most of the controversy is brought up with people who have never seen the exhibition and they have in mind the picture that is influenced strongly by the Hollywood's horror movie sort of thing, and even though, if somebody comes with trepidation, and even though people say "well, I really don't know whether I can stand it, I can hardly see hardly a drop of blood when I see my doctor," those people are positively surprised about what they see and how inspiring it is. They start discussing with family members and friends about specimens they see. they discuss about diseases they perhaps suffer from or a family member suffers from, then they also talk about our mortality. they realize these are real bodies. They were living one, at a certain time, and now, you know, it is as if they are mirroring your own life. They are almost like a bridge to the viewer.

DOUG FABRIZIO

I wonder, were you drawn to medicine based on your appreciation to the human body? did that have a relationship at all to you coming into this field?

DR. ANGELINA WHALLEY

Actually, my goal was really to become a physician. I wanted to become a surgeon. I wanted to deal with patients, and I would have never thought to become or to do one day what I do nowadays. It was just a matter of my private choice to stay with my nowadays husband Günter Von Hagens, who I happened to meet at Heidelberg University after graduating from Heidelberg University. And I must admit, in the very first years I did not really like it too much. I thought my career was drifting too much apart from what my goals are. But, after coming up with these exhibitions I must say it is so much rewarding for me particularly for me being a physician being able to do preventative medicine, to allow people to this knowledge to decide on life choices. I would never, ever in my life like to turn the wheel backwards.

DOUG FABRIZIO

you talked about the arterial system. Are there other functions of the body, parts of the body that you're intrigued by that you...do you have a favorite, for example, that you're drawn to?

DR. ANGELINA WHALLEY

I think what is really pretty amazing is the nervous system and particularly the brain. I think there is hardly any other organ that's more decisive on our self-understanding. I mean, the brain, finally, is all about you.

DOUG FABRIZIO

It's interesting when you see the bodies. There's an air of whimsy about them, there's something fun in some of them. there's a kind of a sense of joy. These are not somber presentations. was that intentional? you wanted to give a sense of...it's not a sense of humor but you see something lovely, kind of joyous in the presentation.

DR. ANGELINA WHALLEY

I think that is really intended. (be)Cause, the exhibition is a meditation on life. so it's not all about science, it's not all about being serious. We want to be pleasing, we want people to approach the body specimens, and we want to awake all the inspiration on very different levels. So I think the different specimens on plane, they also reflect that. and the different poses and the different overall...how can I say that...the overall expression they have, they suggest that very nicely.

DOUG FABRIZIO

You said something earlier today at the press conference. You said "sometimes the poses happen organically." that there's one where you had some of the muscles sort of splayed out. You didn't intend at first for it to be running, but as you sort of worked on it, you figured "oh, this is how we'll present it. Could you talk about that a bit?

DR. ANGELINA WHALLEY

Yeah, the pose and prose of it, it is very creative and intricate work. And there's often not a particular process. It comes together and while working on the specimen, you suddenly feel it. It needs to go like this. It's almost like being a sculptor. when you're in front of your block of marble, you know...how does the artist know where to chisel away the finer pieces of stone? I think the same holds true for the specimen as well.

DOUG FABRIZIO

is it, do you design the poses? Is it a collaboration? You decide how...and do you feel like you are artists in that way?

DR. ANGELINA WHALLEY

Well, I used to work together with my husband in the laboratories until a couple of years ago. But since I'm so involved in the creative part of the exhibition, which requires me to travel quite a bit, unfortunately I cannot afford any longer to work in the laboratory. so, the creation of the bodies, that is my husband's work actually. He is a great anatomist, and has a very unique way thinking. He always strives for new unusual ways and strives for dissection concepts that have been never been applied in anatomy. So, yeah, he's really, yeah, I can say that he's an artist.

DOUG FABRIZIO

He's incredibly creative. You look at the presentation, it's amazingly creative. The use of some of the animals...the camel upstairs, and the pose of the gymnast on the beam, on the balance beam. It's amazingly presented, it's really well thought out. It's an art exhibition for a lot of people I think.

DR. ANGELINA WHALLEY

yes, indeed. I think about, in our surveys, about 50% claim that it is an artistic experience beyond the experience in anatomy and bodily functions. Yeah, it is, for many visitors, an art experience too.

DOUG FABRIZIO

Let me ask you this finally. what do you want people to say about this as they leave? what do you want them to be thinking, what do you want...how do you want it to have affected them?

DR. ANGELINA WHALLEY

I want them to reflect on themselves. if they say "I have now a complete different view of myself, how I am, what it means to be human, I feel inspired to take more exercise, to care for my body," that is what I want. And if I hear visitors saying so, I feel most rewarded.

DOUG FABRIZIO

Great. Doctor, thank you very much.

27:17

My pleasure.