Interview with Dr Emily Grossman

We were lucky enough to have the chance to talk to an award winning science communicator, Dr Emily Grossman. After attending South Hampstead High School, she attained a double first in Natural Sciences at Cambridge University before completing her PhD in Cancer Research. Emily is now an internationally acclaimed Science author, public speaker and TV personality. You may have seen her as the Science Expert on Sky1's Duck Quacks Don't Echo. Throughout her career, Emily has placed a great emphasis on encouraging gender equality in the Science industry.

Did you ever have a Eureka moment where you thought, "This is the subject I want to study"?

I remember, probably before I even started school, sitting on the stairs at the flat in Hampstead where I lived with my mum. I was holding on my lap something that I thought was one of the most exciting things I had and I knew that I was going to spend all day sitting there doing it. It had been my birthday, and for my birthday I had asked for a book of puzzles. I remember thinking that this was so much fun and I just wanted to do it forever. I think that is what has stayed with me; the thing I most love doing is figuring things out and problem solving.

Throughout your career you must have met some very interesting people, who were you most excited to meet and why?

Actually, the person I most enjoyed meeting was someone I met very recently, called Johnny Ball. Now you probably don't know who he is, but when I was your age he was everyone's Maths and Science hero! There were only 4 channels on TV and everyone watched the same programmes. There was no internet, no YouTube, no nothing. Johnny Ball was pretty much the first Science Communicator ever, and he used to present TV programmes about Maths and Science. Everybody my age knew who he was - he made Maths and Science fun and really cool. I even remember getting a microscope set for Christmas one year that had a vinyl record of him talking about his science experiments.

Then, just a few months ago, I was speaking at a Maths conference for teachers and he was the other speaker! It was really cool because I had always wanted to meet him, but he had also heard a bit about my work too. I was really excited and went rushing up to speak to him and he

said, “Oh, I’ve been wanting to meet you! I hear you’re the new kid on the block!” It was this wonderful moment when my mathematical hero was actually saying to me, ‘You’re the new generation of what I do’. That was such an amazing feeling.

What do you think female scientists bring to the industry that perhaps male scientists don’t?

Oh, that’s a juicy question! I don’t think that females bring stuff that males can’t. I think that women bring stuff that males are too frightened to bring themselves. By this, I mean the so-called ‘feminine qualities’ that have been traditionally ascribed more to women – such as passion, sensitivity, ability to empathise, to work together as a team, to collaborate, to care deeply about their work, to use their imagination, their creativity, their intuition. I think that we, as women, could bring these qualities to all industries whilst also supporting and encouraging men to access the same qualities within themselves. Everyone has these traits but, as women, we have been given more permission to realise them. However, we have also been criticised, attacked and repressed for displaying these very same qualities and have not been taken seriously because, in the past, it has been thought that such qualities were not as respectable or admirable as the more traditionally ‘masculine’ qualities such as practical skills, determination, logic, success and intelligence. But, of course, we all have all of them.

Do you believe we can ever reach full gender equality, especially in fields such as science?

Absolutely, I think we can aim for equality of opportunity whereby everyone feels able to make a free choice about which career they want to go into, not just because they aren’t being held back practically, but also because they aren’t being held back subconsciously by subliminal messages that we pick up from childhood about which jobs are for girls and which jobs are for boys. Girls are socialised from a young age to look pretty, to be careful and to look after themselves and others, whilst boys are socialised to be tough, strong, competitive and to take risks. In order to achieve true equality of opportunity, these messages need to stop and this has to start from a very young age. Whether that then leads to equality of outcome, in terms of the number of girls who choose to become

engineers and physicists relative to boys, remains to be seen. I would like to think that, given a completely level playing field, which I think we're a long way from having, just as many girls would make choices to become scientists as boys.

"It is important that young people, particularly girls, understand that there is not just one way to be a scientist."

What do you think needs to be done to encourage more girls into science?

I think the main issue that needs to be addressed is stereotypes. We need to address the stereotypes of what it means to be a woman, scientist or a physicist and also the idea that science is all about success; that to be a good scientist you have to be confident, clever, analytical and not make mistakes. A lot of girls do have these qualities and are proud of them, but there also lots of girls who identify more with other qualities. These could include skills like team work, time management, or being a creative, 'out of the box' person. It is important that young people, particularly girls, understand that there is not just one way to be a scientist. You don't just have to possess those stereotypical qualities, but actually there is room for being sensitive, emotional and creative too. One way to do this is by having more role models; having women, young and old, who are happy and successful in science careers to model the kind of women that young girls today want to be like. There are many different ways of being a scientist just as there are many different ways of being a woman, and we need role models to represent each of these; not just those women who have been successful in a man's world by trying to be more like a man. Of course there's nothing wrong with that, but it's not the only way to be successful and happy in a career in science.

What is the biggest challenge you have had to face in your career, as a woman in Science?

Probably confidence. I face that on a regular basis; feeling good about myself, keeping myself going when I have knock-backs. I got teased at school for being 'a geek' and a bit different. At University I often felt like I didn't fit in, especially when I was doing Physics amongst mostly boys who all seemed so much more confident than I was. During my PhD I worried I was too sensitive and emotional to be a scientist. I spent 8 years as an actress and I had so many rejections, and so many times when I just didn't know if I was good enough. Forcing myself to keep going was really challenging. Even now in my work as a Science Communicator, I face the same challenges. I do feel like I'm in an industry that I'm more suited to now and I do fit in more, but even then, I am constantly trying to reinvent myself, constantly trying to work out who I want to be, what I want to do. If I'm not getting the opportunities that I want, I have to figure out why that is and what I need to change about myself. Do I need to keep going, or do I need to change

direction? The biggest challenge is having the confidence to step outside the box, to take risks and do new things. I try to do this all the time. My motto is "Say yes, panic later". At the moment I've got three or four different books I'm supposed to be writing, one of which I'm absolutely terrified about because I keep thinking that maybe I'm not the right person to be doing this, that I'm not good enough or I won't be able to do it the way I want to. But I just have to keep going and keep reminding myself that it will be okay and I'll do it as well as I can. A good friend once said to me, "All you can ever do is the next right thing." So when I get overwhelmed, I just think, "Do the next right thing; well what's the next right thing now?" And sometimes, the next right thing might be to have a cup of tea and watch Netflix!

"The biggest challenge is having the confidence to step outside the box and do new things"

Do you have any advice for students thinking about going into a career in science?

Absolutely, just go for it! It's super fun and there are so many different ways of doing science. There are so many different ways of being a scientist. And there are so many different careers you can have. Don't let anybody hold you back. Keep going, follow your passions, never give up, believe in yourself, and don't let anyone tell you that you can't! Science needs all types of people with many different skills and personalities: whether you're logical, analytical and outgoing, or sensitive, emotional and introverted. Or a bit of both, like me!

If you are interested in hearing Emily speak a bit more on the topic of women in Science, check out her Ted Talk on 'Why Science needs people who cry'. Also, feel free to take a look at her website www.emilygrossman.co.uk to find out more about Emily's work.

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