

Announcer: Doctor Paul Nurse. *[Applause.]*

On screen: The following story was filmed live at the Players Club in New York City on June 12, 2009. The theme of the night was “Matter: Stories of Atoms and Eves.” It was part of the 2009 World Science Festival.

Dr. Paul Nurse: I'm a geneticist; I study how chromosomes are inherited in dividing cells. But my story tonight will be more to do with my own genetics.

You probably gathered I'm English. I was brought up in the Fifties and Sixties in London. My family wasn't very rich. I had two brothers, I had a sister, my dad was a blue-collar worker, my mom was a cleaner. My siblings all left school at 15 and, um, I was a little bit different; I sort of did quite well at school. I passed exams and then I somehow got into university, got a scholarship, and, um, then did a PHD. But I wondered, Why am I a different to the rest of my family? Why did they all leave school at 15, which is, in fact, what happened. I didn't really have much of an answer, but I felt a bit unsettled about that. You know, I wondered about it occasionally, and I carried on with my life. I got a job in a university, I got married, I had two children, Emily and Sarah—and, you know, just got on with things.

Then my parents who, living in London, they retired to the country. And we used to visit them regularly, but the truth was it was a bit boring. You know, they lived in the middle of nowhere, nothing much happened there. And my kids, who were perhaps 9 or 10 or 11, got a bit bored when they went there. And Sarah, my 11-year-old, had a project at school, and the project was family trees. I have to tell you, family trees are very bad projects to have at school, *[Laughter]* And, um, I said, “I've got a great idea. You know, I know you get a bit bored at Grandma's. Why don't you talk to Grandma about her family tree.”

So we get there, you know, we have dinner, and then off Sarah trots, takes Grandma next door to talk about her family tree. Five minutes later, in comes my mom, absolutely white, absolutely white. And she comes over to me and said, “Sarah's been asking me about my family tree, and I have to tell you something I've never told you.” I was in my thirties by this time, I was in my thirties. She said, “I never told you—” what my mom said is, she said, actually, I'm illegitimate. This is what my mom said. She—you know, I'm illegitimate.

She'd been born in 1910. Her mom wasn't married, and she'd been born in the poor house. She was in poor—she wasn't, um, from a wealthy family, and she was brought up by her grandmother, and her mother had married somebody else who I thought was my grandfather, but that wasn't the case. My grandfather was unknown. So I'd lost a grandfather. Then she turned to me and said, “And actually, it's the same for your father, too.” *[Laughter]* So in two sentences I'd lost two grandfathers. Well, this was a bit of a shock, and then I-I, you know, I began to think about it, and I thought, well maybe this is where I-I got some exotic genes from somewhere, and these are recombined and that's why I'm a bit different.

And then I remembered and that my middle name with Maxime, and I got it from my-my dad who was called Maxime William John. And, you know, he was a sort of farm worker in the country, that's where he came from in Norfolk, and I tell you, in Norfolk, farm workers are not called Maxime usually. This is a French Russian aristocratic sort of name, and it did seem a little odd, so I began to sort of imagine that perhaps, um, you know, I had an exotic grandfather's, you know, French Russian aristocrat and, you know, blah blah blah, and that was why I—why I ended up where I was.

And so that seemed all OK, that seemed a reasonable explanation, and, you know, I forgot about things, and I got on with my career. I became an Oxford professor and then Departmental Chair, then they knighted me, then I got a Nobel Prize a few years ago. So that's all hunky-dory [*laughter*] and then in-in-in 2003, I decided to-to come to New York City. Both my parents had died—they lived to their eighties and nineties—and so I came with my family to New York City to be President of Rockefeller University in Upper East Side. And a couple years ago, 2007, I thought I should try and get a green card. Have you ever seen those poor bastards, all their queuing up in when you come into immigration. They're all people like me who have to wait there for an hour and a half and have their fingerprints all done. Anyway. And, so, if you have a green card, resident's card, you avoid that, OK. So I applied for a green card—huge amount of paperwork, you've no idea how complicated it is—sent the thing off, waited a number of months, came back, and I was rejected. And I thought, how come I'm rejected? I'm a knight, I've got a Nobel Prize, and I'm president of Rockefeller University, and they reject me for a green card. I know Homeland Security has high standards, but, I mean, this did seem more than a little ridiculous.

So I look through all the paperwork, and I eventually found out they did not like the documentation I'd sent with my application. So I went through it and I picked out—they particularly didn't like my birth certificate. So I got my birth certificate back, and it was a , so-called short birth certificate, which we have in Britain, which names who you are, where you were born, the time you were born, your citizenship, and so on, doesn't happen to quite name your parents, OK. Perfectly official documents but that's what I had, and, um, so I thought, well I can go and get the long certificate. I knew the registry office would have it, so I phoned up London registry office and said please send that in the post. I told my secretary in my office, “When it arrives, bundle it all up again and send it off to those silly jerks in Homeland Security.

I went on holiday for a couple of weeks, went to New Zealand, came back, and undoing all the mail, looking at my emails, and so on. Several people in my room I had, um, my secretary, her assistant, my wife who came, my lab manager was around, so quite a few people around. And then I remembered I told my secretary to-to get this packaged sent off, so I asked her, “Did you manage to do that?” And she turned to me and she said, “Well, I didn't do it,” she said, “because, um, the certificate arrived and I looked at it, and I thought maybe you got the name of your mother wrong.” I said, “Of course I didn't get the name of my mother wrong, don't be absolutely ridiculous.” So she handed me the certificate and everybody sort of started to look at me—a bit of a strange conversation to have—so I open it, I look at it, and there, you know, the name Nurse is my, you know, my-my mother, and I say, well, not a problem there. And then

I look at it again, and the name's Miriam Nurse. That was the name of my sister; it was not the name of my mother at all. It was the name of my sister. So I'm looking at this thinking, oh my God, the registry office have cocked up again, you know.

And then I look a bit further, and where it says father, there's just a line. Just a dash, no father. And then my wife comes up and say, "You know what this might mean, Paul." And I was a bit slow actually, and, um, I really didn't quite realize what it might-might have meant. And then slowly, you know, the clouds, you know, roll away. Um, my sister was eighteen years and one month older than me, OK. Now, I haven't told you, but both, not only my both my parents had died (who were actually now my grandparents), but also my mother, she died earlier, multiple sclerosis, 3 or 4 years before. So I had nobody—and all that generation had died—I had nobody to confirm if this story was true.

However, on the birth certificate was the place where I was born, and it was my great aunt's house about 100 miles from London in a city called Norwich. And, um, my great aunt had a daughter who was 11 years of age when I was born. So I phoned her up and said, "Do you know anything about this?" And she said, "Yes, I do." She said, "Your sister became pregnant at 17, and she was sent to her aunt's in Norwich 100 miles away from home. {This is like a Dickensian novel, as you can see.) And, um, she gave birth to you and her mother (my grandmother) came up and pretended that the baby was hers. And she sent your real mother back home, and several months later she took you back with—uh—pretending that she was your mother. And we all lived together in this two-bedroomed apartment for two and a half years, and then my real mother got married and-and left home.

And there's a photograph of me in this wedding, and my mother—my real mother—is holding the hand of her husband in one hand and my hand in the other. Because you realize this was her leaving me with her parents. She never told her husband, so the whole thing was kept secret for over half a century. Now, the same wedding, I crawled under the table, a gateleg table, which had the wedding cake. And I managed to move the leg, and the wedding cake fell off the table and smashed into pieces. I wonder whether I was revolting at the thought of my mother being taken away. Now this was a tragedy I'm sure for my mother. I was brought up happily—a little dully, maybe—by my grandparents, but this was, I'm sure, a tragedy for my mother. She had three children, and she kept four photographs of babies by her bed. (I only learnt this after her death.) Three with her legitimate children, and I was her fourth illegitimate child.

Well what's the final irony here, really, is I'm not a bank geneticist, and my rather simple family kept my own genetic secret for over half a century. Thank you.

[Applause.]