



Patricia Fara studied physics but she realized that she didn't like the subject and specially the laboratory practicals. Then she set up a company of educational programming with successful programs like 'Introduction to computing'. In the late eighties she took a PhD in History of Science at Imperial College, London. Her thesis, on magnetism in eighteenth-century England was supervised by James Secord. Since then she has written numerous popular books on the history of science and is a Fellow of Clare College at the University of Cambridge. We talked about her latest book 'Science: A Four Thousand Year History' (2009) and the history of science.

### **How does your diverse background affect your approach to history of science?**

Designing educative programs we realized that with each image we should only have one intellectual idea. This forced me to concentrate what I was saying into very simple statements, each one illustrated by an image. It influenced the way I lecture and also the way I write. On the other hand, because I have had an irregular career I am not employed as a university lecturer and I am not constrained by the Academic Research Assessment. I can write whatever I like. If I was a university lecturer, I would be obliged to produce so many academic books and articles and I would be under pressure from my department to do that. I wouldn't be able to write a book like 'Four Thousand Years'.

### **How did you decide to write such an ambitious book?**

When I was doing my PhD I went to a conference in 1992 organized by my supervisor Jim Secord which was called the 'Big Picture'. It discussed the problem of linking together all these microstudies we have and I was sitting in the audience thinking "I want to write a book like that". What I have tried to do is be aware of the case studies and put them into a roughly chronological sequence, but without attributing the inevitable success of science as a causal factor linking them. The traditional history books are very triumphalist about science and I have tried to write a book that does cover the whole period of science but is critical and doesn't assume that science always reaches the right answer. That is a message that lots of scientists don't want to hear.

### **Why seven parts with seven chapters?**

That was a really important step in doing the book. When I had the idea of seven on seven all started falling into place, it was a key moment. The fact of having a completely artificial structure meant that I wasn't constrained by things like scientific revolution or centuries... This magical connotation is also a message about the relationship between science and religion and about the arbitrary nature of making any sort of division in history at all. That made it easier to leave things out.

### **Is it possible to appeal readers with a history without heroes?**



That's a problem. Most of the books tend to be about heroes or famous names like Newton or Darwin. And the publishers like heroes as well. That is their idea of what people want. Once I wanted to write a book about how in the eighteenth century, the Royal Society began to influence science policy in Britain, but I knew the publishers wouldn't be interested. Instead, I proposed the title 'Sex, Botany and Empire' and they loved it. Last year was Darwin's anniversary and a lot of academics in Cambridge were involved in the anniversary. On the one hand, they were absolutely thrilled that Darwin got so much publicity. On the other hand they felt that they were contributing to something they don't really approve.

**“That science doesn't always reach the right answer is a message that lots of scientists don't want to hear”**

**Is there a danger of going to the other extreme, to a history of antiheroes?**

There was one year when we did the introduction course to the eighteenth century and we realized that we had left Newton out. You teach students that history is not about picking heroes, but if you give an introductory course you have to have the familiar signposts: you do have to have Newton and Darwin.

**Don't you think there is a gap between historians of science and the public?**

I think it is not so much between academic and public, I think it is more a gap between academics of history of science and academics of other subjects. A lot of academics beyond history of science still think of science as being special. I see that in general history, literature and things like that. There is still this tendency to see science as something separate and different.

**How could we reduce this gap?**

Speaking to people, writing in other people's journals. Those other disciplines regard science as different and they never think to go to the history of science literature and incorporate that in their own studies. We should go and give more talks in departments like for example English literature. They never think of inviting us because they think “Oh no! They are going to talk about science and I'm not going to understand a word of what they say”, which is not true.

**And what about scientists?**

We should try to persuade scientists about the validity of what we are saying. If you teach about Isaac Newton, I see that nowadays our main interest is in Newton as an alchemist, but if you get back to the nineteenth century he is seen as a great genius, if you go to the eighteenth century you can look for instance at that famous statue of Trinity College which depicts him as an Enlightenment orator... Showing different pictures of Newton through the centuries is one way to convey that how Newton is seen depends on us just as much as on Newton himself. Any history is based on personal interpretation.



**Do students learn about new ways of doing history?**

In England this is changing a bit, because in the history curriculum now some history of medicine is taught, but again there is no science. Science is not seen as part of the history syllabus and that's a pity. History is changing so much, it used to be just wars, dates and monarchs, but now it focuses on social history. Even so, history of science changes aren't included.

**“It is kind of a paradox that we are writing about the importance of the history of the book and the material objects but we are going always to the web”**

**And what about the schools?**

Nowadays there is a debate in England about history. Margaret Thatcher wanted all the children to learn about English history: the Trafalgar battle and all those great things. All the social historians said that we had to learn about the history of women, history of the lower classes and international history. Now you go to the schools and one term you are doing the Incas, another term you are doing Henry VIII, the other the Vietnam War... The children are completely lost and have lost the sense of continuity. There is a movement among some historians that we want to move back, not to Ms Thatcher but let's go back to traditional history where you learn the great British events and get some sense of British identity, particularly because we have got a lot of immigration and it is seen as good to have some sense of British history.

**Could you give a piece of advice about the art of writing?**

When you start writing you realize what you don't understand and you have to continue researching and getting better. So you have to rewrite a lot and every time you rewrite it gets better. Another important thing is that you really have to go back to the original versions if you want to understand for instance how Darwin's readers received and understood his work; you have to go to the material physical object. Which is kind of a paradox, because we are writing about the importance of the history of the book and the material objects but we are going always to the web. I know people that finish their whole PhD without going to the library!

**What is your next project?**

I am writing a book about Erasmus Darwin, Charles Darwin's grandfather. What I am trying to do is write about the process of research. A book like '4000 years' gives the impression that I knew everything and just sat down one day and wrote it out. Of course it wasn't like that. I am trying to convey to the reader what it is like to wander around, not understanding things and trying to fix things together. It's quite experimental.