engineers, doctors, professional people, lawyers, MPs, and so on. They come along and have a lovely party every Friday night. One of the traditions is demonstrations. Faraday used to say that you can't hold the attention of anybody for even one hour unless the way is strewn with flowers, and the flowers of course are demonstrations. And they specialise in children: I have just been lecturing to 500 prep school children about the laws of motion. Just to keep them all awake I do things like swinging across that great theatre on a trapeze! It's a fun place.

Cogito: One of the functions of philosophy is to encourage a critical attitude to issues that would otherwise not be examined, and I wonder whether you feel that this attitude has a role to play in science?

Sir George: You know the motto of the Royal Society: Nullius in verba, which is from Horace. It is a little extract from a longer quotation which means, in the words of a new television programme, 'take nobody's word for it', or 'I do not rely on authority'. It was really aimed at Aristotle who - I am sorry to be rude about him among philosophers - got nearly everything wrong because he rarely did an experiment. He pontificated, and he got the simplest things wrong. He asked the question Galileo asked: if I have two weights, one heavy and one light, which falls faster? Obviously the heavier one, because it has a greater attraction to the ground, or something like that. All he had to do was to drop them and have a look.

Cogito: What about the role of criticism in theory construction and the more abstract parts of science? When we try to understand what modern physics is about, we find considerable debate among physicists about what is reasonable explanation.

Sir George: That's right, but that's what science is. John Ziman calls it public knowledge, and the thing about the way science works is that people will argue and argue until they all agree. There is general consensus about most parts of science, except the stuff right on the frontier. Obviously if you ask about the meanings of some parts of modern physics, we know nothing about it, and it seems hardly worth arguing about, but we will be arguing about it until we agree.

Cogito: Often scientists in the past have been encouraged in their advances by their philosophical interests. Einstein, for example, was influenced by the philosophical writings of Mach. Do you think philosophy has a role to play in encouraging a critical