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The attractions of academic science

Comments at the Conference on Postgraduate Careers
made by the Director of CaSE on 17 March 2005

What makes young scientists want to go into academic research, and what factors deter them?

Broadly speaking, I think there are three sets of reasons that have, traditionally, made a university science career attractive, namely: (i) an ability to pursue one's own interests, (ii) the academic lifestyle and (iii) the possibility of making a difference in the world.

In the first two, I think recent policy developments have diminished the attractiveness of academic research, and in the third, I think our public and political attitudes could do more to demonstrate the value we place on university scientists.

Academic freedom

Traditionally, university scientists had a large degree of freedom to pursue their own research interests. We all know the story of how Watson and Crick worked on the structure of DNA despite the fact that almost nobody thought it was a good idea; indeed, they had been told not to carry on with the work.

The kind of academic freedom that they enjoyed was not just neglect on the part of the authorities; it had a value, as their own amazing discovery demonstrated. We are all now very excited about the benefits that might flow from our knowledge of the Human Genome, but none of those benefits would have been imaginable, let alone actually possible, if Watson and Crick had not been given that freedom.

And of course, that ability to work on those things that really interest you is a very considerable attraction in choosing a career. Very few people are really so interested in their jobs that they would turn up at work regularly even if they were never paid. But the number of Emeritus Professors who attend their laboratories every day attests to the fact that for academics, this is not true.

Current Changes

Academic freedom is being eroded. It is happening subtly, and none of the individual changes would necessarily amount to a damning indictment of the

Government. However, the changes are collectively adding up to a disturbing trend.

For example, in 2003, the Office of Science & Technology produced a list of questions that publicly-funded scientists must work to solve 'in the next few years'. They ranged from
• What does it mean to be a citizen of an expanding European Community?
to
• What is gravitation?

You may think those are good questions (the second one has certainly taxed the greatest minds of the last half a millennium; the first seems a little parochial in space and time by comparison). But whatever you think about the questions, this is the first time since the foundation of the Medical Research Council in the 1920s that the Government has sought to dictate in detail the specific questions that the Research Councils must ask.

It follows on from the allocation of the science budget in 2000, when ring-fenced pots of money started appearing in the 'science vote'. For example, there was a ring-fenced pot for the rural economy. Now the rural economy is very important, and we need to understand it better, and to research it more. But where that research is needed for policy reasons, it is the job of the Department of the Environment, Food & Rural Affairs, not of the Research Councils. In theory, the creation of this ring-fenced pot of money means that the Research Councils may be forced to give a grant to a poor-quality applicant in the field of the rural economy, even if there are many unfunded applications in other fields.

The degree to which politicians are now interfering in research priorities was in evidence when the Prime Minister recently donned a white coat to announce the most recent allocation of the science budget. He told us how much of the money would be invested in stem cell research over the next three years before anyone had even written their grant application.

So, the degree of freedom to pursue one's own research interests is becoming a good deal less than it used to be, with the consequence that academic science is a less attractive career than it used to be.

Academic lifestyle

I do not want to give the impression that the life of an academic has ever been suitable for idle dossers, but there is no denying the traditional academic lifestyle encompassed a great many benefits. The ability to manage one's own time, not to have to stick to rigid hours, to work at home if you wanted to, to enjoy college meals, to schedule tutorials at your own convenience and many other advantages have often been parodied and criticised. Whatever their value, almost no academic who is now nearing the end of his or her career would pretend that these things were not valuable in the past, or that they have diminished.

Current changes
The amount of bureaucracy has increased in academia, just as it has in every walk of life (especially in the public sector). Teaching Quality Assessments, Subject Reviews, Research Assessment Exercises (and so on) did not exist thirty years ago, and their burden has increased rapidly in recent years.

In some cases, there has been good reason for the changes, but there have really been any commensurate trade-offs. Academics are not paid any more than they used to be to compensate for the extra form-filling.

As the system has expanded, most academics have seen their workload increase, and the idea of a 'long vacation' (which has never been very realistic) is now a joke.

There is of course always a degree of exaggeration. People often complain about new health and safety rules ruining their daily lives, but when challenged they generally cannot name a specific regulation that has changed. Likewise, one often hears academics bemoaning the 'three-volume manual of rules' that accompanies the new system of auditing public money in universities. But while it is true that such a manual exists, almost no academic ever has to read it, because it is largely aimed at the people who prepare financial reports in the administrative centres of institutions.

However, there is no doubt that the changes to a traditional academic lifestyle have made university careers less attractive for scientists, who have not been compensated financially. Nobody ever went into university research for the money, but current salaries are extremely poor, especially now that most graduates have significant levels of debt when they enter the labour market.

Making a difference
Academics have always been able to feel that they are making a constructive difference to the world. Whether it is in opening the minds of the next generation, contributing to the cultural life of the nation, or working on a cure for cancer, university lecturers and researchers have always brought, and continue to bring, much that is positive to society.

Current changes
While there has been no let-up in the positive contributions that university researchers are making, growing cynicism and the increasingly demanding nature of the public services has made it easier to overlook or downplay those contributions.

That is not specifically the fault of the Government or of policymakers in general. Like doctors, the police and other public servants, university staff must learn to cope with a society that is in some ways less appreciative than it used to be.

But there are ways in which the Government could help. For example, when the England rugby team won the world cup in 2003, and when some British athletes won some Olympic Gold Medals in 2004, there were victory parades, and everyone was invited to tea with the Queen (as a justified national symbol of how we value the contribution these people make to our national lives).

But the British people who have won Nobel Prizes in recent years have received no such honours. The three science prizes can be each be shared among no more than three individuals, which means that in any one year, a maximum of nine people anywhere in the world can win a share of a science Nobel Prize. Over four years, therefore, a maximum of 36 individuals can win a share of a maximum of 12 prizes, so these awards are even more selective than the 303 gold medals that were awarded at the Athens Olympics last year. Many of those medals were awarded to teams, and this figure does not include the Winter Olympics. So Nobel Prizes ought to be ten times more prestigious than Gold Medals, but we still choose to celebrate the achievement of Olympic athletes many thousands of times more than we commemorate Nobel Laureates.

Of course, since most people will win neither, this may seem like an esoteric point, but in fact, I think it is illustrative of the way in which the invaluable contribution made by academics is unvalued by our society, relative to the achievements of other professional groups.

<u>Conclusion</u>

Academic careers are exciting and fulfilling, and they attract clever people with high ideals and great ideas. But the traditional drivers – freedom to pursue a question of interest; an attractive lifestyle; and the ability both to make a difference and to be recognised for having done so – are being eroded. In consequence, a career in university research and teaching is becoming much less attractive than it used to be.

As a nation, we are not even attempting to make up the difference by rewarding our scientists financially, and academic careers have become so poorly paid that around a half of all universities in a survey said they had handed funding back to the sponsor because they could not attract anyone of the a high enough calibre with the level of salary they were able to offer.

Luckily, there are still plenty of young people out there for whom the attractions of an academic research career outweigh the disadvantages, but if we are not careful, we will lose the cutting edge science base that has been one of the jewels in this country's crown for many decades.

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