

nature

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## PhD in evolution

EIGHT months ago the Science Research Council (SRC) produced a report on postgraduate education which by the standards which generally prevail in the academic world was decidedly radical. The working party, headed by SRC chairman Sir Sam Edwards, proposed amongst other things that greater emphasis be placed on graduate students taking a wide range of courses, particularly in their first year. A high proportion of broadly based compulsory course work leading to an examination for a Master's degree or equivalent qualification was suggested. The option of continuing for a further two years, the report went on, should only be open to students who had passed the Master's course and demonstrated real aptitude for research. The example of MIT was clearly well to the fore in the working party's deliberations.

The background to this needs little rehearsing. In the 1960s PhDs were being signed up with enthusiasm, not least by the new universities which then proceeded to generate even more PhDs of their own. These days universities no longer recruit, emigration is less of an option, the civil service does not grow in size, so PhDs find themselves applying for a job, somewhat reluctantly maybe, to those same industries to which they might have applied three years earlier. But industry's view of a PhD is by no means one of universal approbation—indeed, those in industry who think that PhDs are of little use to their needs have been getting much of the attention in the last year or two. Small wonder then that SRC decided that some spring cleaning was necessary of the ideas surrounding the PhD.

In the past two months a form of participatory democracy has been in operation. SRC had already received many written submissions on its report, but it decided to take to the road as well so that the report could be discussed more informally in regional gatherings of university science staff and industrialists. That exercise, which took the SRC to Cardiff, Birmingham, Glasgow, Leeds and London, is complete; now the SRC must try to see whether anything like a coherent policy can emerge from the consultative process. The general conclusions that can be drawn seem to run as follows:

- Industry does not speak with anything like a unified voice in its views about the relevance of the PhD. Even within the same company it is possible to find, say, research directors and personnel managers who would differ in their assessment of the value of the degree.

- Whilst most academics support, or at least don't oppose, the idea of more taught courses, the idea that these should be compulsory has had a very mixed reception.

- The idea that the courses should be concentrated in the first year of postgraduate education has come in for some criticism.

- The nature of the assessment at the end of the first year has caused some alarm, not surprisingly amongst students who fear another year of being tyrannised by examinations.

- Many people have expressed doubts about the feasibility of doing a good research project for a PhD in two years rather than three.

Some of these points will undoubtedly result in a softening of the SRC's approach; more than once the council was urged to encourage evolution rather than impose revolution, and such changes as spring from the exercise are likely to emerge slowly over the next decade. For it is not at all clear that the SRC should use the muscle that it has, in the way of discretion over grant money, to force the pace. Maybe the very fact of the report and the chance to air views will have generated enough momentum.

The one thing that the SRC should not soften on, however, is its conviction that there is not a "correct" duration of three years of research for the PhD. A fairly common view amongst academics was that a period of less than three years in the laboratory is inadequate for students to make a research contribution. If the student is being trained to write papers or know more about some particular subject than anyone else in the world, this may have some element of truth in it. But industry does not usually hire its PhDs for either of these reasons; it hires them for their potential to work in a broadly based team. And the PhD who stays in the academic world is going to have plenty of time to develop the necessary expertise later.

Moreover, it is a poor comment on the quality of postgraduate course work if it doesn't make a significant contribution to helping students to be more effective researchers, by pointing them in the direction of key literature, by exposing them to the ethos of research and by allowing them the luxury of sampling different staff members before having to make a final choice. A year of coursework could easily be worth two of research. □