

# International PhD standards

SIR — I recently watched from the sidelines as the university committee charged with administering PhD degrees resolved disagreement by external referees on the worth of a PhD thesis submitted by a student of mine.

One reviewer (from the United States) claimed the thesis provided insufficient advances in the field of study and declined support for the award of the degree, another (from the United Kingdom) judged the thesis excellent and requiring only minor amendments. The process required the judgement of a third external referee who returned a positive grading. The process prolonged the examination period, putting extra pressure on the candidate and raising the question of the nature of international standards for this type of degree.

The extremes were, I believe, symptomatic of different expectations by reviewers of acceptable thesis content — expectations that may reflect quite different perceptions of just what constitutes a PhD degree today. These may largely be related to the period expected for completion — in the United States often 5–6 years, in the United Kingdom up to 3 years. Some European countries expect up to 6 years. The trend in New Zealand is to require com-

pletion within 4 years.

As any biological scientist knows, the product of 6 years' work is vastly different in scale from what may be achieved in 3 years. There is also a greater likelihood of published products within the longer time — a requirement of our negative examiner to obviate his concerns but one that would have prolonged the examination process by many months. Different international expectations must affect the external reviewing process used by most universities to protect the integrity of their higher degrees.

Framing the PhD study to be conservative and guaranteed to yield desired results; directing the course of research to avoid difficult or more challenging areas as they arise; encouraging early publication of any completed work or even incomplete work and selecting external reviewers on the basis of certainty ('cronyism') rather than risk a result based on open expectation — these are all strategies available to supervisory panels to counter possible criticism of thesis content, but most of them are surely contrary to the spirit of investigative science.

Operating longer PhD programmes best suits the universal PhD prescription requirements which require evidence of

independent research and advance of knowledge, but is this the best way to encourage students into advanced science? A 6-year period may better suit the generation of results suitable for publication by the candidate (and grant-dependent supervisors), but it is surely too long as an apprenticeship for a science career. If the PhD degree is to be truly international as a qualification for postdoctoral, academic and industrial positions, reasonable boundaries are needed for the demonstration of both independence in research and advance of knowledge.

**David W. Fountain**

*Department of Plant  
Biology and Biotechnology,  
Massey University,  
Palmerston North,  
New Zealand*

## Proving difficult

SIR — An intelligent observer, conscious of the guiding principle of science that the crucial means to distinguish truth from falsehood are those of experiment, but unfamiliar with the notion that paranormal phenomena are 'impossible', would raise his eyebrows on coming upon the following assertions, made recently by two supposedly reputable scientists:

(1) Crane, in reviewing Nicholas



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Humphrey's book *Soul-Searching (Leaps of Faith in the United States)*<sup>1</sup>, suggests that we can save ourselves the trouble of looking at claims of the paranormal by invoking Hume's argument that it is more reasonable to believe that human error lies behind such claims than it is to "believe that some fundamental law of nature has been disrupted".

(2) Hyman, for the purposes of dismissing apparently strong evidence for a 'remote viewing' capability<sup>2,3</sup>, asserts somewhat similarly that no matter how many investigations of the paranormal, carried out by whatever means, yield positive results, there will still be no proof that the alleged phenomena occur.

In response to enquiries as to why the usual mechanisms of science should be abandoned in this special context, our observer would be directed to study *Soul-Searching* in order to understand why claims of the paranormal are not taken seriously by scientists. But a subversive parapsychologist would suggest looking also at my review<sup>4</sup>, whereupon our friend would realize that Humphrey's arguments are flawed and hence of no value. He would study also some of the original research<sup>5-7</sup>, and wonder whether the scientists might not be making a monumental error in condemning it so vehemently.

The fact that scientists at large do not come to the same conclusions as our mythi-

cal observer stems, I believe, from two main factors, whose existence mocks the claim of science to be the agent of unveiling the truth, however strange that truth may appear: 'received knowledge', reinforced by the activities of propagandists; and the publishing policies of journals, which limit very effectively the acquaintance that the ordinary scientist has with parapsychological research, and thereby make informed assessment of the work in general effectively impossible.

The references below will provide readers with a better perspective with which to evaluate the evidence. And, for the benefit of those with access to the World-Wide Web, I have created a page, located at <http://www.tcm.phy.cam.ac.uk/~bdj10/psi.html>, with links to the text of some of these and to sites where more information may be obtained.

**Brian D. Josephson**  
Cavendish Laboratory,  
University of Cambridge,  
Madingley Road,  
Cambridge CB3 0HE, UK

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2. Lehman, S. *Nature* **378**, 525 (1995).
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5. Bem, D. J. & Honorton, C. *Psych. Bull.* **115**, 4-18 (1994).
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## True but strange?

SIR — Ernst *et al.* (*Nature* **381**, 361; 1996), in writing about complementary medicine, do not reflect the true results achieved with homeopathy.

For example, initial aggravation in a homeopathic case is the optimal reaction that can be expected from a correct constitutional remedy. Mental effects, if they are not qualified, mean nothing. For instance, if depression changes into irritability, that is a good sign and a prognostication that a cure will eventually ensue. And Ernst *et al.* do not differentiate between classical and 'mongrel' homeopathy, which is giving mixtures of remedies repeatedly for the disease and not for the patient.

I agree that "such survey data are inevitably limited". For instance, aggravation may occur because of wrong homeopathic prescribing, when a lot of remedies mixed together are given repeatedly. But there are also curative reactions — apparent aggravations — that foretell a complete cure with correct prescription as in classical homeopathy with one remedy and one dose only.

**George Vithoulkas**  
International Academy  
of Classical Homeopathy,  
1 Perikleous str,  
Maroussi,  
Athens 15, Greece

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