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More EPSRC woes
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such particles could be observed (beyond the direct measurement of speed), and just as much discourse regarding the meaning of these particles with respect to fundamental topics such as causality. But in any case, we thought it worthwhile to remind readers that the idea of faster-than-light particles has been around for a long time, often without predicting severe revolutions in ordinary physics; that additional experimental signatures may be available and should be searched for; and that the claimed implications for the theory of relativity are far from clear.

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Light footprint

In “How big is your footprint?” (October pp20–21), Phil Marshall produced a brilliant, concise summary of the reasons why physicists and astronomers should pay attention to their carbon footprints. The case for a reduction in energy use and greenhouse-gas emissions by everyone, and the case for we physicists contributing our special knowledge and setting a good example, are both unanswerable. Still, I would urge caution in placing quite so strong an emphasis on the individual. Exhortations to behave rationally in the face of severe ecological danger have been made by enlightened thinkers and groups for several decades. Yet something must be missing. How are we to understand the complete failure to arrest, much less to reverse, our collective overload of the planet?

Of all the people who have ever existed, most lived under conditions that today’s prosperous minority now consider hard. For a half-century or so there was the hope of transcending those conditions. Now, people everywhere are told that it is much more difficult than it was thought to be because there is still severe scarcity – but now the scarcity includes “sinks” for waste products as well as “sources” of essentials such as clean air, food and water. This is a hard lesson to absorb. It requires us to question profound aspects of our culture, including – at the least – neo-liberalism, capitalism, work, property, power and justice. Only in a radically different culture will every individual’s footprint be appropriately light.

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More EPSRC woes

In my letter (August p18) about the policies of the Engineering and Physical Sciences Research Council (EPSRC), I pointed out that in mathematical physics five out of the 22 proposals for postdoctoral fellowships and all three full proposals for Career Acceleration Fellowships submitted in 2010/11 were “office-rejected” by non-scientists without peer review. In his response (November p23), David Delpy, chief executive of EPSRC, says that such rejections are justified if the application falls outside the EPSRC funding remit. Indeed, I was informed by EPSRC in April that this was the reason for all the rejections in mathematical physics.

This came as a surprise since theoretical

physics has been funded by the mathematical sciences programme for many years and was certainly in its remit when the applications were submitted, as can be seen from the link <http://bit.ly/rJk9d3> (PDF). When I asked why the community was not informed of the change in policy, a spokesperson wrote back “My colleagues assure me once again that the remit of our mathematics programme has NOT changed. The maths programme does not fund theoretical physics.”

As they used to say in the former Soviet Union, the past is very unpredictable.

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Physics and psychology

I found Duncan Watts’ article on sociology (October pp30–34) particularly interesting as several aspects tied in with my own experience of cognitive psychology. I became involved in image processing and machine vision in the late 1970s, when digital frame stores became available. Our focus was on the problems associated with surveillance, navigation, industrial inspection and biological healthcare screening that depended on complex recognition processes. Furthermore, such processes were related to the operation of both short- and long-term memory.

As we developed algorithms for these tasks, I had the uneasy feeling that psychologists knew more about the science of these problems than I did, but literature searches showed that this was not necessarily true. The methods of experimental psychology are explicitly based on those of experimental physics,

Comments from physicsworld.com

Two stories appeared on our website last month about the Russian-led Phobos-Grunt mission to Mars and its moon Phobos – the first reported the craft’s failure on take-off (“Russian mission to Mars fails”, 9 November) and the second that it is likely to crash back to Earth by the end of this year (“Mars craft looks set to crash to Earth”, 15 November and p6). The failure raised concerns about the difficulties of getting to the red planet and the potential creation of yet more dangerous space junk.

I am Russian myself and it is very sad that we have lost contact with this probe. But the history of cosmos exploration shows that it is not unusual for projects to fail. The USSR’s first missions towards the Moon had 29 fails from 45 tries. Yet, eventually, we were able to reach the Moon and explore it. Later, NASA’s launch of Hubble had a defect with its main optical system. It is normal that first launches to the red planet are complicated, though

it pains me that we failed yet again. Other mistakes include the loss of contact with NASA’s Deep Space 2 probe; the Mars Climate Orbiter, which burned up in Mars’ atmosphere because the two teams that built it used different measuring systems (imperial and metric); and the NOAA-19 weather satellite was damaged even before take-off because its team dropped it on the floor.

There were mistakes in the past and there will be mistakes in the future. Each scientist needs a failure to achieve success. I am sure that if not this mission, then one of the next ones will be successful. Russia’s prestige might drop but we will not stop trying.

Daniil Pavlyuchkov

This is the second time that Russians have (nearly) failed in a mission to the red planet. Let’s hope they are successful in their mission to Mars. But were Russian space engineers fully ready for the launch of this probe and had they tested their rocket

engines fully in the laboratory?

Naik Aadil

Who does nothing, breaks nothing. But next time I’d recommend equipping such a space probe with an auto-destruct mechanism. Now it’s out of control and full of frozen hydrazine-nitrogen-dioxide binary hypergolic explosive.

Ragtime, Czech Republic

Hey Russia. Yes, you. This isn’t a Cold War race any more. You can actually take time and properly engineer your spacecraft now. Please do so, before one of them lands in someone’s living room.

J L ConawayII, Melbourne, US

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