

## Editorial practice

## Hoaxed by a Nonsense Paper

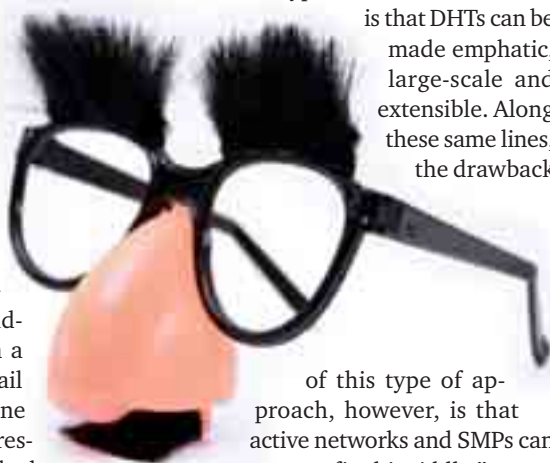
Have you ever received e-mails from publishers asking you to submit research papers to their journals? At a time when getting your paper published can mean a lot of hard work, it's tempting to think that life could be a lot easier – why not accept the invitation? It seems that some publishers have sensed this desire and are prepared to cash in.

In particular, the open access publisher, Bentham Science, whose enthusiastic e-mails to researchers have been equated with spamming. Thinking it was too good to be true, Philip Davis, a communication science student from Cornell University, decided to put Bentham to the test, “In a period of 2 weeks, I received 3 e-mail messages from Bentham Science. One promised me a position on their ‘prestigious’ editorial board, another asked me for a submission to a journal outside my field, a third was seeking any submission remotely related to social sciences. Just how desperate was this publisher for a manuscript? Would they accept my submission as long as I was willing to pay their \$800 submission fee?”

Encouraged by Kent Anderson, an executive director from the *New England Journal of Medicine*, Davis decided to send in an obviously fake paper to see how the publishers would react. He created the paper using SCIgen, software created by graduate stu-

dents at the Massachusetts Institute of Technology that generates a paper that is “grammatically correct, although completely nonsensical. SCIgen even generates figures, tables and a set of references. These papers look professional, until you read them.” For example, the introduction began “Compact symmetries and compilers have garnered tremendous interest from both futurists and biologists in the last several years. The flaw of this type of solution, however,

is that DHTs can be made emphatic, large-scale and extensible. Along these same lines, the drawback



of this type of approach, however, is that active networks and SMPs can agree to fix this riddle.”

Davis and Anderson signed their paper with pseudonyms, gave their affiliation as ‘The Center for Research in Applied Phrenology’ in New York and submitted it to Bentham’s *The Open Information Science Journal* on January 29th. Bentham confirmed receipt next day, then four months later, on June 3rd, notified the authors that their article had been accepted. “This is to inform you that your submitted article has been accepted for publication after peer-reviewing process,” wrote Sana Mokarram, Assistant Manager of the

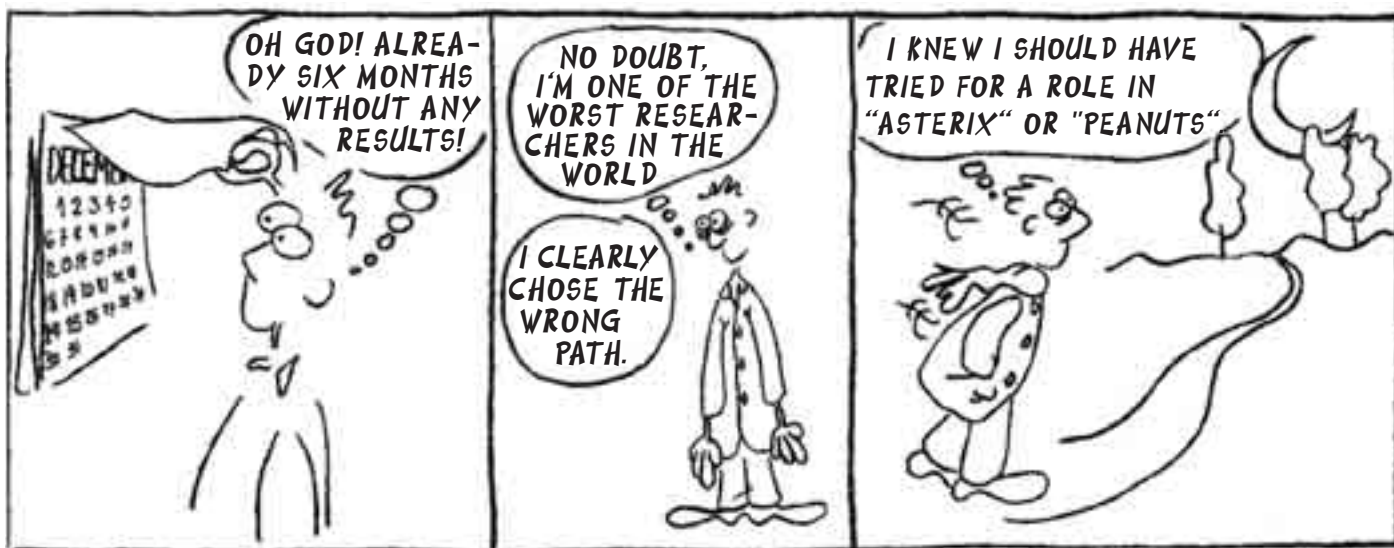
Publication. But what peer-reviewing process? There were no reviewer comments but plenty of details about how to pay the \$800 fee to be sent to a post office box in the SAIF Zone, a tax-free complex in the United Arab Emirates!

At this point, Davis withdrew the paper, preferring to save his money. But he did present his findings in a blog to ‘The Scholarly Kitchen’, a website for “What’s hot and cooking in scholarly publishing,” from where it was picked up by journalists. Once he learned about the hoax, Bambang Parmanto, the editor-in-chief of *The Open Information Science Journal*, resigned. Parmanto, an information scientist at the University of Pittsburgh, said he had not seen the manuscript or any peer review comments before it was accepted. Indeed he hadn’t even been informed that it was accepted! “I think this is a breach of policy,” he said. The journal was founded by Bentham in 2008 and Parmanto said he had reviewed other manuscripts for the journal but that he was resigning from his volunteer position to avoid being “taken advantage of” any further. Despite this, Bentham insisted that the manuscript had been reviewed by one member of the journal’s editorial board. “The review process didn’t work,” Parmanto told *Nature*. “The publisher could take advantage of the fees and that is why I want to leave.”

Mahmood Alam, director of publications at Bentham Science Publishers, said that “submission of fake manuscripts is a totally unethical activity and must be condemned,” and insisted that Bentham had “a rigorous peer review process.” On their open access website, ‘Bentham Open’ ▶▶

BY RAFAEL FLORÉS

PAUL THE POSTDOC



## Recently Awarded

► **Joan Massagué** is the first winner of the Spanish **BBVA Foundation's Frontiers of Knowledge Award** in Biomedicine. The Barcelona native currently heads the Cancer Biology and Genetics Program at the Memorial Sloan-Kettering Cancer Center in New York and has published over 340 publications in leading scientific journals; with more than 62,000 citations, he is regarded as Spain's most-cited working scientist. Among the milestones in his scientific career was the isolation of transforming growth factor beta (TGF- $\beta$ ), a principle inhibitor of cell growth which, when disrupted, is also implicated in cell transformation into tumour cells. Together with his team Massagué subsequently elucidated the molecular pathway conveying the TGF- $\beta$  signal from the cell membrane to the nucleus, one of the fundamental processes controlling cell division. His group's latest findings, published in the May edition of *Nature*, explain how tumour cells manage to breach the blood-brain barrier and form a new tumour in the brain. The award comes with prize money of €400,000.

► **Jeffrey Friedman**, head of the Laboratory of Molecular Genetics at Rockefeller University, and **Douglas L. Coleman**, emeritus scientist at The Jackson Laboratory in Maine, share the \$1 million **Prize of the Hong Kong based Shaw Foundation**. The two are regarded as the decisive figures in the discovery of leptin, the key hormone in regulating food intake and body weight. Coleman conducted a series of experiments in the 1970s that led him to propose the existence of a "satiety factor" presumably accounting for obesity and type 2 diabetes among certain mice. The scientific description of this factor emerged in 1994, when Jeffrey Friedman and his team identified a gene in mice and humans called *obese (ob)* that codes for a hormone. After subsequent purification they named it leptin, after the Greek word leptos, for thin. Moreover, the group caused dramatical weight loss in mice that were massively overweight, due to leptin-deficiency or resistance, by injection of the hormone. -RN-

► claims to publish "over 250 peer-reviewed open access journals". However, Davis himself admits that Bentham cannot be entirely blamed. In February 2008, he had already tried this experiment, sending a hoax paper to another Bentham publication, *The Open Software Engineering Journal*. At that time, his SCIgen manuscript had been effectively rejected; he received a rejection letter one month after submission together with comments from two reviewers, one of whom rejected it for "lack of technical contribution", while the other said, "It heaps together seemingly random theories and technologies without any clear motivation or explanation. The result is an incomprehensible paper on which I am not able to give constructive comments."

Nevertheless, Davis's Hoax has raised further questions about potentially serious flaws in the open-access, author-pay model, "Some publishers see this as a lucrative opportunity" in which to "use the good will of academics and their institutions for profit motives." -JG-

### Niche research areas

## UK Sends out a Rescue Call

Are you worried that your research skills may be drying up or that you can't get your research done because the only bloke with the necessary know-how retired last



month? A call has been sent out by the UK's Biotechnology and Biological Sciences Research Council (BBSRC) to identify and rescue "niche areas" that are in danger of being lost from the bioscience research community. The BBSRC is the UK's public funding agency for academic research and training in the non-clinical life sciences. It invests around £450 million annually in university research and directly runs several research institutions, including the John

Innes Centre and Rothamsted Research. It is now consulting with the UK bioscience research community about concerns over "potential shortages in strategically important and vulnerable niche areas of research expertise."

To do this, they have sent out a questionnaire through the Biosciences Federation in which they ask for help in identifying at-risk 'niche research skills'. These are defined as "areas of specialist research expertise where the number of expert individuals need not necessarily be large but where there may be an important requirement for the UK to retain some expertise in the area concerned". It appears that such 'niche' expertise "can be particularly vulnerable due to a number of factors – for example, limited training or career opportunities for individuals or the retirement of existing specialists over time, etc."

However, it is not enough to complain to the BBSRC and simply ask for extra funding – they want 'evidence'. In particular, they want evidence of 'user need' for a specific area of research expertise and "details of why that skill might be disappearing from the wider research base." Once the questionnaires have all been filled-out and returned in July, the BBSRC are confident that "this will enable prioritisation of support for areas that have a vital impact on the UK's ability to carry out world-class bioscience research."

The BBSRC's Director of Innovation and Skills, Celia Caulcott, explains that "whilst the numbers of subject experts needed in a particular field might not be high, it is important to ensure that the UK is taking steps".

It will be interesting to see which 'niche areas' qualify for endangered skills status and what solutions will be proposed to maintain the UK's skills biodiversity. -JG-

### New research centres

## Proteins and Brain

Last month, two new and ambitious research centres were launched – the Novo Nordisk Foundation Center for Protein Research associated to the Faculty of Health Sciences at the University of Copenhagen, and the Edmond and Lily Safra Center for Brain Sciences (ELSC) at the Hebrew University of Jerusalem.

The Protein Research Center is the result of a donation from the Novo Nordisk Foundation, which, in 2007, gave the University €80 million for its establishment. It is headed by director Michael Sundström, ►►

► provides laboratories for more than 150 international researchers and shall encourage synergistic collaboration between several disciplines, including protein characterisation, proteomics, systems biology and disease biology.

Israel's new \$130 million brain research centre started with a lead donation of \$50 million from the Edmond J. Safra Philanthropic Foundation and sets out to pursue five different inter-cooperative fields of brain research. The first will focus on genes, molecules and nerve cells in the brain; the second will focus on research of structure and function of local neuronal circuits; the third will focus on research of electrical activity and the communication between brain areas, with the aim of understanding how senses, movement and thoughts are created; the fourth will research cognitive processes and will focus mainly on aspects of human brain function; while the fifth will focus on theoretical fields, computational aspects and building models of the nervous system, proposing new experiments and predicting their results.

As usual, the launches of both centres were accompanied by 'big words'. Dean Ulla Wewer from Copenhagen University said, "With the establishment of the research centre, Danish protein research will acquire working facilities that make frontline research possible." At the same time, the monitoring committee of the ELSC determined that the level of research in the field of brain sciences at the Hebrew University is among the highest in the world and that a newly equipped centre will enable the university to be ranked among the top five in the world in this field. -RN-

#### Research indicators

## The Austrian View

The Austrian government has presented its annual 'Research and Technology Report'. Therein are a lot of interesting statistical results about European and global research.

For example, the report states that the EU(15) area published more scientific articles during the period 1997-2006 than the

USA (3.3 million vs. 2.7 million). When referred to the number of researchers, however, the picture turns around: the US researchers published 11.19 papers on average, their EU(15) colleagues a mere 6.95. Even more, the US researchers were much better cited on average (146 citations vs. 73.2 citations).



Also quite interesting is the chart "Highly cited scientists per 1,000 scientists". Number one, again, is the USA with 15.67 highly cited scientists per 1,000 scientists, followed by Switzerland (9.69) and the UK (6.96); Germany ranks 13th (3.12), France 15th (2.88) and Japan 16th (2.12). And Austria? Second to last with less than one highly cited researcher per 1,000 scientists (0.68). -RN-

## Fight Gravity!

Dutch-Russian team discovers that a small alpine plant grows roots upward into the overlaying snow pack.

Shoots grow upwards, roots grow downwards. That's what even children know without any biology lesson. However easy the pure observation, the more difficult it has remained to elucidate the underlying cellular and molecular mechanisms. Thus, there are still many question marks as to how plants sense gravity and transform the information into directional growth of its organs - roots in the direction of gravitational pull (positive gravitropism), shoots in the opposite direction (negative gravitropism).

Quite often in science, an enigmatic process has been solved by finding (or creating by mutation) the 'exception to the rule'. Hans Cornelissen's team from the Free University of Amsterdam has now found such an 'exception' in root gravitropism. In the high, mostly snow-covered Caucasus Mountains of southern Russia, they discovered that the small alpine plant *Corydalis conorhiza* forms a network of roots which, unlike normal roots that grow into the soil, extend upward against gravity into the overlying snowpack (*Ecol. Lett.* 2009 Jun 4., Epub ahead of print). Therefore, the authors coined them 'snow roots'.

According to Cornelissen, the 'snow roots' are fundamentally different in structure from the usual 'soil roots'. They are much thinner and decay rapidly after being exposed to the air due to snow melt. But what are they for? By performing <sup>15</sup>N isotope tracking experiments, Cornelissen's

Russian-Dutch team showed that *Corydalis* plants were able to acquire nitrogen via their snow roots directly from the snow packs. Other plants from the same ecosystem without snow roots didn't capture any nitrogen.

Cornelissen *et al.* thus concluded that the snow roots of *Corydalis* constitute a specific adaptation for the fast uptake and transport of nitrogen. "These roots help the plant to 'feed' on nutrients in snow before the plant shoots appear above the surface in the growing season," explained Cornelissen. "This gives the plant an advance on other plant species, which can only take up nutrients through roots in the soil during the very short growing season." And in the *New Scientist*, he added, "We have some indication from very old literature that an unrelated plant might have the same adaptation," says Cornelissen. "If that can be confirmed, then snow roots have evolved at least twice, independently."

An interesting aspect, indeed. Even more interesting, however, might be whether *Corydalis* could provide the basis to further unravel the inner secrets of gravity-sensing in higher plants. As the plant also possesses normal 'soil roots', the obvious question is how, at the cellular level, does *Corydalis* manage to transform the gravity stimulus into two different root growth reactions that are diametrically opposite in terms of direction? -RN-



(More research results from European labs on pp. 30-35)