INTERESTED? INTERESTING!

As it George Bernard Shaw who remarked that “the only trouble with the poor is that they haven’t got enough money”? Governments must feel the same about scientists. But the anxious quest for funding brings other troubles, which should not be disregarded. We all know that exacerbated competition breeds paperwork, performance policing, pettiness, privatisation and many other confusions and distractions about which I wrote in “Prometheus Bound” (Cambridge UP 1994). It also has a more insidious effect.

Seeking support for our research, we are drawn or pushed towards sources with material interests in the results. We have to forecast putative benefits – not necessarily short-term cash value added, but at least a glimpse of a new path to a material or social gain. The projected end may be highly laudable – a wonder drug or an electronic gimmick of boundless capabilities. This goal may also be so speculative that one wonders who is being fooled.

But “large promise” – as Samuel Johnson defined advertising – is not the point. The real question is whether it is desirable for all research work to be sustained by organisations with obvious practical interests.

What is threatened is the norm of “disinterestedness”. Community practices assume and ensure that contending scientists present their views sincerely, in the service of no other cause than their personal reputations for sustained and trustworthy effort in the furtherance of understanding in a particular field. Taking this for granted, we assess their presentations accordingly. But we judge differently if we know, or suspect, that they have other, more mercenary motives for taking a particular line. And how can they deny such influences, if they are being paid by an organisations dedicated to winning profits for its shareholders or votes for its legislators?

Even the over-optimistic promise of useful results in a grant application is not quite weightless on the objectivity scale-pan.

This sounds quite unduly scrupulous. The scramble for funds can be sordid, but we all know well enough now, don’t we, not to fall into the hands of the tobacco companies or the arms industry, or other bodies that we regard as antisocial. But consider a familiar situation: a court case about the safety of that wonder drug which we have proudly helped to bring into use. Independent expert witnesses will be needed to help reconcile the interests of various parties – one or more commercial firms, a state regulatory agency, some unhappy patients or victims, and so on. Where will these experts come from, if all the relevant researchers are funded directly by just a few of these parties, in this case most likely the big companies?

Look at the appalling story of BSE, where political and commercial interests imperilled the flow of critical information. Objective, disinterested, “academic” scientists may look to the public like beggar brahmins dwelling in ivory towers. But they are vital participants in socio-political life. The bottom line of the balance sheet of justice in a pluralistic polity can only be drawn equitably with their aid.

John Ziman
SolZim@compuserve.com
ALPHA GALILEO: ON-LINE PRESS CENTRE FOR EUROPEAN SCIENCE JOURNALISTS

An innovative plan to start an on-line press centre for European science journalists should be formally launched as a pilot at this year's British Association for the Advancement of Science meeting in Cardiff, Wales (7-11th September 1998).

The project Alpha Galileo (previously Sciencedotnews), will provide on-line access to European press releases, briefing papers, a calendar of events, an address book, and eventually pictures. Most of the funding for the AlphaG pilot will come from two of the UK Research Councils: the Particle Physics and Astronomy Research Council (PPARC) and the Engineering and Physical Sciences Research Council. The project is also being developed in collaboration with euroscience and CERN.

PPARC's Head of Communications, Peter Green, and a member of the EUROSCIENCE Governing Board, met with DGXII officials in early May to explain the purpose of the project. The system should be live by mid-July. However, the service will not be formally launched until it has been fully tested. Press releases on AlphaG will initially be in English. However, French and German summaries will also be available.

AlphaG, like its North American counterpart 'Eurekalert', aims to be a one stop shop for journalists. However, AlphaG's intentions are aimed more directly at improving the public understanding of science and promoting the science community. Although Eurekalert would like to claim that it has worldwide coverage of science press releases, its service is heavily dominated by American releases. This means that European science can get overlooked by the international press. European institutions may also have been slow to take up the Eurekalert service because of the subscription fee required.

AlphaG makes no charges for posting, or using, the press releases. So it will have to be entirely reliant on external financial support - probably largely from those funding the research. If it is to survive past the next financial year, it looks like it will need long-term support from across Europe.

EURO-OBSERVATORY FOR WOMEN ANNOUNCED

Edith Cresson announced the formation of a European Observatory for women and science on 29th of April. The announcement came in Cresson's closing speech to a Brussels conference on the same theme. She explained that the observatory aims to: collect data on the presence of women in European programmes; encourage the participation of women in projects and research teams; ensure a significant presence of women in consulting units; pay special attention to research fields of particular interest for women; and create a European network of women and science.

Cresson emphasised the need to think of scientific careers at a European level. She also inspired by the UK's Women's Development Unit within the UK Department of Trade and Industry. During the conference a number of speakers, such as the UK science minister John Battle, had suggested that something like this development unit should be extended at a European level.

Mrs Cresson explained that “In science or in politics, the presence of women will become - I hope - so natural and obvious, that one will have to make efforts to remember our times when being a researcher and a woman was considered an exceptional performance.”

EUROPEAN WOMEN IN SCIENCE

The working group on Women in Science has 35 members, with more joining all the time. The group will operate mainly by email, and group members will be able to access the discussion archives via World Wide Web pages. This is an opportunity for members to be involved in determining how the working group on Women in Science operates, and what it does.

I would like to take this opportunity to clear up any misunderstandings about who can join this group. As is demonstrated by its present membership, it is open to all EUROSCIENCE members - male or female. It is a working group on women in science, not a group for women only.

The working group will be tackling issues of importance for women in science of all ages, for example: why
girls do not take up science, what graduates do with their science degrees, and why there are so few women in senior positions.

If you wish to join the group, please contact me as soon as possible (natasha@southern.com). Discussions of the working group will initially be held in private and any opinions stated are assumed to be from individuals in the group. We will keep EUROSCIENCE members up to date with reports.

EUROSCIENCE OPENS UP CHANNELS TO SCIENCE MINISTERS

People join EUROSCIENCE for a range of different reasons. For those who want to develop a voice that the corridors of power will listen to, the reception of our document on Management and Assessment of the EU Framework Programmes (see EUROSCIENCE Bulletin no.3) should give considerable encouragement.

Not only was this document – which was produced by the Science Policy working group after wide email consultation with EUROSCIENCE members – well received in Brussels, but several Science ministers and others wrote to say how useful some of the ideas were. The response of John Battle, the UK Science minister who chairs the appropriate meetings during the UK Presidency, was particularly positive, calling the EUROSCIENCE paper welcome and timely, and indicating areas where the UK and EUROSCIENCE share similar concerns. Similarly, M EP Eryl Mcnally liked our emphasis on creativity, and indicated that the EC seemed prepared to take on some of our ideas.

This, of course, is only a start. But channels are beginning to be opened up, and EUROSCIENCE’s input – which is that of its individual, concerned members, not of sectional scientific or national interests – is being taken seriously. Partly as a consequence of this operation, it has been suggested we might also look at budgetary issues, and how national science policies might be co-ordinated. These issues are among those now being addressed by the Science Policy working group.

NEW LOCAL SECTIONS

We welcome the formation of the following new local sections of EUROSCIENCE. More information can be found on the web site.

1. The Upper Rhine section, covering the region of Basel, Freiburg, Karlsruhe, Mulhouse, and Strasbourg, will be inaugurated on June 13 1998.
   Benedikt Hoffman:
   benehoff@cipserv.biologie.uni-freiburg.de

2. The UK section was formed on 20 May 1998, in the upper bar of the John Snow pub in Soho.
   Dennis Rosen:
   ucapid2@ucl.ac.uk

3. A Romanian section was created on 4 May 1998 in Bucharest.
   Eugen Gheorghiu:
   egeorghiu@pcnet.pclnet.ro.

4. A Georgian section was inaugurated in Tbilisi on 23 April 1998.
   Levan U rashadze
   levanu@hotmail.com.

EUROSCIENCE GOVERNING BOARD MEETING

The board met at the European Molecular Biology Laboratory in Heidelberg on April 29, 1998. The major items discussed included the following.

- Future of young scientists, and the job bank.
- Co-operation with industry.
- Organisation of future meetings. These include a transatlantic symposium with the AAAS, a session at the UNESCO World Science Conference in 1999, and, with the Polish Foundation for Science Advancement, a meeting on Science in Post-Communist Societies.
- Increasing interactions with learned and other sister societies.
- Membership (which continues to increase) and finances.

A fuller account is being posted on the EUROSCIENCE web site.

LOCAL CORRESPONDENTS WANTED

EUROSCIENCE NEWS is looking for local correspondents to improve our coverage of what is going on throughout Europe. These correspondents would be on the look out for items of science-related news of interest to members – perhaps a controversial statement by a government minister, a meeting related to Science in Europe, developments in science funding or science education in your country, or similar.

If you would like to have a go at keeping us all informed about what is going on in your country or area, please contact John Finney as soon as possible.
DOCTORIALES® – A NECESSARY NEW CULTURE?

The Doctoriales® are seminars organised in France to prepare PhD students for professional life. This article examines how the Doctoriales® function. A second article will look at how they could be extended in Europe.

WE NEED A BROADER PHD CULTURE

The emergence of the Doctoriales® in France was triggered by the many recent changes relating to the function and content of the PhD. These include the number of available academic positions, an apparent 'over-production' of PhDs which has led to an employment crisis since 1995 in France, the effects of the financial crisis on publicly funded research, and the hyperspecialisation of research.

Young researchers increasingly have to look for jobs in non-academic areas. They thus need to be aware of the possibilities in the private sector, where new kinds of careers are emerging. Traditionally, graduate education has prepared students for careers which use directly the knowledge and skills so gained. Students prepare for a research career by learning to work independently on an advanced research topic. However, the traditional PhD does not suit industrial career requirements, nor even the academic positions which have evolved in the last decade. Here is thus a need to modify both the content, and the underlying philosophy, of the PhD. The need is not so much to raise the recognised high quality of research post-graduates, but rather to increase the 'added-value' of the candidate's personality.

Examples elsewhere (e.g. the Association of Graduate Schools in the US, the Career Research Advisory Centre, CRAC, in the UK), have made it clear since the end of the sixties that PhD students need to be introduced to 'company culture' before they enter the job market. Postgraduates must develop a broad view of their specialist area, and understand, socially and professionally, their position in the wider world. As Lapidus has said: "Students should keep their eyes and ears, their minds and their options open".

THE EMERGENCE OF THE DOCTORIALES®

In France, this need was first felt within the Ministry of Defence, in the General Delegation to Weaponry (DGA). DGA has a powerful research branch, and sensed the necessity to adapt its PhD students to the industrial market. It reasoned as follows. Nations must attract young researchers and make research training profitable, considering the huge investment in human, financial (around 150,000 euro per PhD in a DGA-type structure) and material terms. Young researchers should feel they can rely on their nation, and use to best effect their real abilities in industry. Technology has a strategic role to play; in Japan, they noted that 70% of Chief Executive Officers possess a high level technological or scientific degree. Thus we must not produce fewer PhDs, but train them in a more appropriate way. PhD courses have simultaneously to become preparations for research, scholarship, faculty positions, industrial positions, professional practice and life in general: PhD students must be open-minded and effective professionals.

The DGA looked at a system developed in British graduate schools since 1968 by the CRAC. This system has trained to date more than 20,000 PhD students. The results are impressive: around 70% assert they know themselves better, more than 50% have changed their career objectives, around two-thirds have found better ways to run their research project. DGA adapted this system to French needs and attitudes. It established in 1994 a link with the Association Bernard Gregory (ABG), which was created in 1980, and specialised in helping young French scientists to find jobs (Valette 1997). Its structure was perfectly adapted to such training. Two trial seminars were held in 1994, and a 'specification document' (Couesnon et al 1995) was written. The first seminar Doctoriales® took place in Fréjus in October 1995. The 78 students responded very positively: it stimulated a real self-assessment of their motivations and characters, and opened up a way forward to prepare effectively for the post PhD period. The DGA and the Ministry for Higher Education and Research mandated R. Tixier within the ABG to advise the organisers of Doctoriales® in implementing further projects.

These seminars were extended nationally in 1997 by the ministry. So far, 39 seminars have taken place. 2,000 post graduates attended them in 1997. Although only a fraction of PhD students apply to attend, and only a limited number are accepted, this is not considered a problem. The Doctoriales® must develop progressively if its spirit is to penetrate the national research structures. As R. Tixier has asserted: "If we want to win the war, let's begin by defending our strong features". In other words, we should concentrate our efforts on motivated students. Teachers, supervisors, researchers, doctoral schools, and many others, are influenced progressively. Thus an extensive network of convinced and motivated people is built up, whose influence will grow in the longer term. Moreover, researcher placement in either industry or acade-
nia will become an important doctoral training criterion which goes beyond both a discipline's subject matter and its relative weight in the national effort. We can now ask: what makes a successful PhD? Answers include not only a well-received written report and successful collaborations, a good private life, and high confidence in the future, but also a successful preparation for further career opportunities, the establishment of fruitful contacts, and successful associative commitments.

THE GOALS AT WORK

Formally, Doctoriales® train PhD students in the realities of industry and the job market. One main feature characterises the approach: students are encouraged to learn how to work together, and to generate and develop back in their home laboratories associative structures in which they will be active – mostly proactive – and open to the surrounding world. They promote an interdisciplinary way of thinking. The student is invited to enter into a self-development process: LaPídus calls it “preparation for life”. The PhD diploma, and also the career, are presented as a learning project. Doctoriales® involve project management methodology (Germain 1998), in which a systematic view is adopted of one's task and position in the structure of the project, independent of its nature. In doing so, the student is able not only to decompose a structure and analyse subsystems, but is also able to go back to a synthetic systemic view, allowing effective management of resources. Risk is considered as a stimulator, not a hindrance. What will happen post PhD is not a question you can ask only when you have completed it: you do not develop an instrument without knowing what you can do with it and without evaluating the options. Time lost is critical. How can you convince an employer if it is obvious that you have applied to him by default?

The Doctoriales® seminar gives a pedagogical shock: the student is suddenly intensively socially active and autonomous in a totally new and creative environment which they might never have experienced before. Participants are kept in a closed residential environment, from which they cannot escape. Within each seminar group of around 80, small groups of 5 to 10 participants facilitate integration, communication, and the real participation of each student. Each one must define their role in a potential company, the methods by which they could discharge it, and how the PhD training can be used to achieve this. Innovation is shown to be merely a way of thinking. From this follows the competence, the personality, and the confidence we place in them. Companies are shown as dynamical entities offering varied opportunities: each participant has to create their own opportunity. Doctoriales® help student awareness of employment search methods. It urges them to create and develop a personal network, and to use the organisations that have been created to help their search, such as the ABG and, in the near future, EUROSCIENCE in partnership with ABG. Furthermore, Doctoriales® will be a significant factor in improving the perceived value of the degree.

Doctoriales® students can be either from Universities or Engineering Schools. We do not yet know if the impact is greater on one group or the other. For University-organised Doctoriales®, 71% of participants have a purely university background, while in DGA, the students are engineers from High Schools. Whereas in DGA, 75% of students contacted in a study responded, only 13% did from the University of Paris 6. The awareness and motivations of the two groups of students are obviously not the same.

Sixty-three percent of the students attending University-organised Doctoriales® have no international co-operations and 70% have no industrial links. The majority of those students declare employment aims as i) a post doc.; ii) academic research; iii) a job in industry. A job in industry is seen by many as a failure, and the student is obviously not prepared for it. But were they aware of all the alternatives? The PhD thesis is after all only a finite term contract. The ABG estimates that twice as many doctor-engineers find jobs in industry as do non-engineer PhDs. It is even easier for PhDs from engineering Schools to find industrial positions. All the available studies show that people attending Doctoriales® are more aware of, and more motivated to work in, the private sector: 76% think of this as a possibility. However only three percent think about launching their own company. They often lack the necessary information and the entrepreneurial spirit.

INTERNATIONAL EXTENSION?
The seminars are multidisciplinary. Should they be, or can they be, multicultural, mixing students from different countries? We think not, since the spirit and goal would then not be the same. The systems are so different between European countries that we would need to understand all the expectations of all participants. Doctoriales® students each come with their own very different expectations of the Doctoriales® themselves and of their careers. Important parameters
influencing employment decisions include income, geographic mobility, the nature of the work, and the political context. For instance, according to J. Vyhnalikova, a PhD student in France, low incomes drive post-graduates from the Czech Republic to look for a position abroad, even though there are no employment problems within the Czech Academy of Sciences. In this context, we should stress that Doctoriales® are open to foreigners who are PhD students in France or who are willing to work in France, or in other EU countries. These foreign students also contribute to the cosmopolitan nature and the success of the seminars.

Given that these seminars are inspired by a British model, we see no reasons why they could not be adapted to any country, just as the DGA did for the French system. Belgium is setting up a similar formula. A second article will look at how this system might be further extended in Europe.

Benoit P Germain
Observatoire de Paris

ACKNOWLEDGEMENTS

SOURCES

EUROSCIENCE AT THE BRITISH ASSOCIATION

At the invitation of the British Association for the Advancement of Science, EUROSCIENCE is organising a half-day session at the 1998 Festival of Science, the major meeting run every year by ‘the BA’. This year, the meeting will be held in Cardiff, Wales, 7-11 September, and the EUROSCIENCE session will take place on the morning of Tuesday 8 September 1998.

The theme of the meeting is Collaborative Science in the European Arena, and we have lined up three excellent eminent speakers who will address the issue from their different standpoints. Professor Alan Leadbetter, the UK Associate Director of the Institut Laue-Langevin, the world’s most powerful reactor source of neutrons for scientific exploitation, will talk on the role and tremendous success of the Polygone Scientifique in Grenoble, France, which includes also the new European Synchrotron Radiation Facility and the European Molecular Biology Laboratory outstation. Professor Fotis Kafatos, the Director-General of the European Molecular Biology Laboratory in Heidelberg, will speak on how the unique facilities and characteristics of this transnational laboratory have enabled it to address important challenges for European biology. Finally, Dr Michael Perryman, the Project manager of the Hipparcos space astronomy mission at the European Space Agency, will tell us how recent measurements have advanced our understanding of the Galaxy’s structure, composition and evolution.

Also at the meeting, there will be other talks that are strongly relevant to the interests of EUROSCIENCE, including ones by Dr Chris Llewellyn Smith, the retiring Director of CERN, and Maurizio Iaccarino, UNESCO’s Assistant DG for Science.

This meeting is a very high profile one for science in the UK, with a large media presence. We are looking forward to a stimulating EUROSCIENCE session within this UK showcase for science. Attendance is open to all. If you are interested in going, please contact the British Association. Fax +44 171 973 3051 or email on ba.major.mgr@mcr1.poptel.org.uk
GESELLSCHAFT DEUTSCHER NATURFORSCHER UND ÄRZTE, GDNÄ

GDNÄ, the Society of German Natural Scientists and Physicians, aims to further research and science by promoting interdisciplinary communication.

It was founded in 1822 by the natural philosopher and physician Lorenz Oken (1779-1851) with the goal "to nurture the relationship between natural scientists and physicians and to further the general, mutual interests of the natural sciences and medicine."

One of the oldest scientific associations of its kind in a German-speaking country, it has around 5600 members, principally - but not exclusively - from Germany. Members may be actively involved in research at universities, research institutes, or industrial laboratories, may be teachers, practising physicians, pharmacists, or interested laity.

The meetings of the GDNÄ significantly influenced scientific developments in the nineteenth century. Around the turn of the century, science was becoming increasingly specialised. Many societies devoted to specific areas of research were formed, based on GDNÄ's example. In this context, the GDNÄ adopted a new goal, concerning itself with combating the loss of an integrated scientific community, and striving to counterbalance the progressive specialisation in the natural sciences and medicine.

The Society holds a congress every two years, organised around a general theme. The September 1998 congress in Berlin is entitled "Information World - our Worlds of Information". Scientists from disciplines such as physics, informatics, chemistry, biology, and medicine will each deliver an overview of aspects of information from his/her area of expertise, providing the participants with information on the latest developments from disciplines other than their own.

This multidisciplinary approach to problem solving is the fundamental idea promoted by GDNÄ meetings.

As the gatherings of the GDNÄ also attempt to form a bridge between scientific research and the general public, presentations are made to be understandable by the 'intelligent layman'. Efforts are directed particularly at young students, to encourage them to develop an early interest in medicine and the natural sciences. In addition, as the society is concerned with the public view of scientific research and its benefits, it provides a forum in which the layman can discuss scientific advances.

Further information: Gesellschaft Deutscher Naturforscher und Ärzte, Hauptstrasse 5, D-53604 Bad Honnef, Germany. Phone: +19 49 42 24 / 92 32 37 fax: +19 49 42 24 / 92 32 40 email: Gdnac@gdna.de www.gdna.de/gdnaenglish.doc

EARMA

We are very pleased to welcome an association with the European Association for Research Managers and Administrators.

EARMA was launched in Genova, Italy in January 1995 to promote the effectiveness of European research by improving the quality of research management and administration, and to set high standards of performance for those engaged in research management. EARMA shares these objectives with other organisations, like EUROSCIENCE, the Research Administrators Network (UK), Science Alliance (NL), and the Society of Research Administrators (USA).

As associated organisations EUROSCIENCE and EARMA will:
- inform each other of events, and allow reciprocal attendance at members’ rates;
- share news and information;
- link each other’s web pages;
- look for further ways to co-operate as our associations develop.

Both organisations look forward to fruitful contacts, exchange of information and strong personal networks.

http://www.cineca.it/earma

EUROSCIENCE GENERAL ASSEMBLY 1998

Strasbourg, Friday 9 (8 pm) to Sunday 11 October (1 pm)

Programme will include:

Keynote lectures
The Energy Challenge for the 21st Century; Policy Makers and Global Climate Change.

Debate
Responsibility of Scientists in the Conduct of Research.

Symposium
Science and Technology in a New Europe.

Discussion
New activities proposed by members.

Revised statutes will be submitted to the membership. Members are also asked to propose candidates in advance for the renewal of one-third of the Governing Board, for which a postal ballot will be held.

Put this date in your diary now!
EUROSCIENCE Finances

A small group of people in Scotland formed a society called “Science Alliance Communication Forum”. They contributed a small amount of money and tried to get sponsorship for Public Understanding of Science, but without much luck. With the agreement of the officers, the Treasurer bought one lottery ticket for one pound and won over nine million pounds as the single winner of the Jackpot! So now this tiny society has the equivalent of 100 million French francs invested, and bringing in 7.5 million FF income. They have just announced their first large project.

Maybe the EUROSCIENCE Treasurer should buy a lottery ticket?

Simon Mitton, Cambridge University Press, Cambridge CB2 2RU, UK. Phone: +44 1223 325760; fax: +44 1223 315052; email: smitton@cup.cam.ac.uk.

Is Simon - who IS the EUROSCIENCE Treasurer - trying to tell us something? As he very well knows as a scientist, a statistically more significant procedure would be to NOT buy a lottery ticket every week, but instead send the accumulated stakes to EUROSCIENCE...

Provincial Science in Modern Russia

Many Western scientists are aware of work in the FSU on the effects of electric and magnetic fields on water. This letter from a group active in this controversial field gives an insight into the difficulties of doing scientific research outside the major centres in Russia.

In modern Russia, it is widely believed that serious science can be done only in a few big cities. This opinion has survived “perestroika”, and is still common today.

The financing of fundamental scientific research has always been settled largely in the capital. What resources went to the provinces were scientific institutions assigned to particular industries, including those of the military/industrial complex, and research groups in higher educational institutions. The former have either died out, or are dragging out miserable existences.

What is left is university science, with ageing enthusiasts who have never had much support, and who are used to working under poor conditions. Lack of modern laboratory equipment is compensated for by using “Rutherford’s method” - string and sealing wax. Scarcity of scientific information forces them to search for original, outwardly simple solutions that are not always understood by venerable colleagues.

Thus, our laboratory in Kovrov carries out research on water, not from the traditional point of view, but by trying to solve problems by simple, available means. We are studying the influence of electric fields on water. This electrically treated water produces an activating effect on living organisms, and is more active in technological processes and in medicine. We are extending our studies to the joint effects of electric fields and other physical factors, and are also considering practical applications in medicine and plant cultivation.

Working in such scientific isolation, we see participation in EUROSCIENCE as an opportunity to expand our scientific contacts. We would welcome collaborative research to help us overcome the consequences of the disastrous breakdown of Russian science and the lack of internal support.

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