

Translation to the Public

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Translation to the Public

Our so-often-talked-about young scientist (who unfortunately probably never reads editorials) is expected to have many a virtue, of which confidence is an essential one. First of all, he/she needs confidence in his/her own abilities (hopefully paired with some self-criticism), a *conditio sine qua non* for becoming successful. He/she also cannot avoid having to invest some confidence in previously published papers that lay the groundwork for his/her own projects and hypotheses or that describe methods that sometimes seem to work only in the hands of the authors. Finally, a lot of confidence in the mentor is necessary, since at the beginning of a project one can hardly assess whether the hypothesis is as good as it sounds and whether support and promotion will come as hoped. With an ongoing, successful project, a further challenge to one's confidence appears on the horizon: one must have sufficient confidence about the future—namely, that a successful academic career is more than merely possible but also probable. Here, the mentor can do very little to help develop confidence because the major issues may be those over which the mentor has very little influence. Not the least of these issues are the political and global financial conditions that will ultimately affect the number of positions at universities and other research institutions as well as the amount of money allocated for research grants. On the one hand, world-wide expenditures on scientific research—especially Big Science—have grown enormously over the past few decades. On the other hand, this is a difficult time for the young researcher to develop confidence in a stable, long-term perspective for an academic career as an independent investigator.

As a consequence of the bank crashes, economic crises, and perhaps too many years of overstretched budgets, we in Europe now see an increasing need to cut budgets. Some countries are under strict budget control by the IMF and the EU, and others—trying to avoid becoming dependent in such a way—are trying to significantly reduce budget deficits in a very short time. Individual countries have started very

ambitious budget-reduction programs. Newspapers tell us that in the UK the budgets of the governmental departments (except the National Health Service) will be reduced by 25% on average until 2015. France and Germany have decided to reduce the budgets as well. In Germany, the planned reduction amounts to a total of 80 billion € over the next 5 years. For those familiar with basic mathematics, it is clear that many groups within society will now have to renounce familiar social standards and eventually either accept a reduced income when paid by the state, higher taxes, or reduced benefits. It is no wonder that everyone looks to see whether and how one's neighbor is affected. Being deprived of social and financial privileges can be more easily tolerated when others are in the same situation! Without doubt, the public budgets for research and university education (in Europe mainly financed by the states) will be checked carefully for potential reductions as well, although many politicians agree that cuts on budgets for science and education would be counterproductive in the long run.

An indispensable question to young researchers who are at a critical stage of their career planning is whether they now see a clear indication that research and university education will not be cut back but will substantially increase... that society and the state will consider funding for these programs a natural investment that is so essential for the future that any thought of reducing the budgets for universities or for the public funding of research is simply inconceivable and, instead, that budgets should be substantially increased to create more jobs for academic careers. But is it so?

I, personally, am receiving an increasing number of applications from PhD students from poorer European countries whose home laboratories suffer from reduced funding due to public budget restrictions. Such cuts force these students to seek new jobs and projects abroad. Even in rich Germany, where the universities are mainly funded by the states, an entire faculty of Medicine at the University of Luebeck was recently scheduled at short notice to close completely for financial reasons

(this was only avoided by intervention from the Federal Government). In other places, drastic budget cuts have already been announced, or at least decided, which will inevitably cost academic job positions. This development clearly does not inspire confidence. The German government (which by constitution is not allowed to fund universities directly) now pours considerable amounts of money into an excellence initiative and new national health centers. However, these investments will probably have the side effect that the chasm between the well funded and the many underfinanced universities will increase even more. Because of their higher teaching loads, the underfinanced institutions will be even less attractive for post-doctoral fellows. I consider this scenario a considerable risk to scientific progress since I am convinced that new ideas and breakthroughs often come from the bottom up and not just from the big programs, which tend to be conservative. In the long run, the funding of such big programs may not leave enough money for substantial funding of individual investigators and may reduce considerably the broadness of the job-application spectrum for younger people.

Given the risks outlined above, it would pay dividends if the politicians were convinced that they must invest in universities and young researchers, that they must avoid generating undue fears of long-term insecurity, and that they must give a firm signal that research and university education are indeed high priorities. At the very least, politicians (appearing to think in maximum 4-year terms only) must be convinced that the people themselves consider it an absolute priority, even higher perhaps than public transport or resurfacing of the roads or any other of the many public tasks that one can imagine. It is too late for the present situation, but how can we convince our fellow citizens that research and a good university education pay dividends for all of us? Do our fellow citizens really know about the progress being made in the laboratories? Do we overstretch their expectations when some of us promise that stem cells and new gene therapies will solve every health problem within the next few years? Or do we continue the tradition of exchanging our results and perspectives only

with fellow researchers? Only if we win over our fellow citizens—by translating our findings into realistic positive perspectives for society and by conveying the excitement and innovation of our research—can we hope that society will make research and education a top budget priority. This task cannot be left to scientific societies alone, although some of them, including the American Physiological Society, are very ac-

tive and professional in these matters. Nevertheless, there are still too many scientific societies whose main purpose remains the organization of the next annual Congress, and who do not wish to give too much support to platform organizations that could bundle their efforts and lobby more effectively in public. Perhaps we all must learn that we need to support and reshape our scientific societies in this direction.

Moreover, we must recognize that it is our own, personal task to increase our roles as ambassadors to the general public to strengthen the position of universities and research when it comes to future public budget decisions. After all, such ambassadorial activities would be one simple way to improve the confidence of our younger colleagues both in ourselves as mentors and in their perspectives for the future. ■