

Problems of germline therapy

Sir — You recently published a full-page report of a Californian symposium on germline gene therapy, and a leading article, without a single mention of preimplantation genetic diagnosis¹.

If a couple are at risk of having a child with a serious genetic disease, it is now possible for them to have their embryos screened at the eight-cell stage, after *in vitro* fertilization, to ensure that only unaffected embryos are transferred to the uterus. Only in the very rare cases where both partners are sufferers from a recessive condition that allows survival to reproductive age, such as cystic fibrosis, will no unaffected embryos be generated. As 10–20 embryos could be produced from a single egg recovery, it would not be difficult also to avoid the birth of carriers if that was desired.

Most couples would surely prefer to avoid the transfer of affected embryos, rather than seeking to tamper with their DNA at such an early stage, with possibly unpredictable consequences. Leroy Hood, chair of molecular biotechnology at the University of Washington, said: “We are using exactly the same kinds of technologies that evolution does”. For those who know anything about evolution and its many failures, this is hardly a strong recommendation.

James Watson is reported as saying:

“Scientists should proceed unhindered towards germline engineering”. Either he has forgotten that the simpler and safer technique of preimplantation genetic diagnosis, already in clinical use, renders germline gene therapy for genetic diseases virtually pointless, or it is germline engineering for genetic enhancement towards which he wishes to proceed unhindered?

If it is the latter, he should say so. How about it, Jim?

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Sir — One statement in your recent leading article about the consequences of germline gene therapy¹ is unfortunately familiar: “Our first task should be to take a long, hard look at [what] is likely to be involved — both scientifically and ethically”. This recalls “Government, religious, civic, and scientific leaders should encourage widespread public discussion of the pros and cons of germ line gene therapy”² and, from a Commentary in *Nature*, “timely ethical discussion of this issue, before germline gene therapy in humans is technically feasible, may assist future

policy-makers in their deliberations”³.

Indeed, this apparent concern was voiced in one of the first official inquiries into the subject: “The novelty of gene splicing ought not to erect any automatic impediment to its use but rather should provoke thoughtful analysis. Especially close scrutiny is appropriate for any procedures that would create inheritable genetic changes”⁴.

As technical advances make germline gene therapy an even more imminent possibility, one can ask, what has happened in the intervening 16 years? Why has this debate not reached a broader audience? And when will the debate spread beyond the offensive pronouncements of James Watson, who, when once asked if he feared that genetic engineering could be used for ‘positive eugenic’ ends, replied, “It’s not much fun being around dumb people”?

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1. *Nature* 392, 315 & 317 (1998).
2. Institute of Medicine, National Academy of Science. *Human Gene Therapy* (Harvard University Press, 1988).
3. Walters, L. *Nature* 320, 225–227 (1986).
4. US President’s Commission for the Study of Ethical Problems in Medicine and Behavioral Research. *Splicing Life* (US Government Printing Office, Washington DC, November 1982).

DIY meetings

Sir — Your leading article on postdocs’ dissatisfaction with the conference circuit will strike a chord at all levels in the scientific community (*Nature* 392, 211; 1998). It is not just a problem of competitiveness but rather one of same faces, same stories. The solution is simple — no invited lectures and an intensive programme of 15-minute presentations by the postdocs and postgrads who are doing the experiments. The UK Molecular Microbial Ecology Group is holding its 4th Annual Meeting at the University of Warwick and yet again the scientific programme is a delight.

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Italian reforms

Sir — Giulio De Leo *et al.* draw attention to the debate in Italy about the reform of research policy (*Nature* 391, 12; 1998). They also show the results of a

bibliometric analysis of papers in environmental research produced by the universities, CNR, ENEA and other scientific institutions between 1981 and 1996. From these statistics they conclude that the ENEA production is low in numbers and quality.

But ENEA (Italian National Agency for New Technology, Energy and the Environment) is not a typical research institution, because it exists to produce know-how as well as to provide services (under contract), advice and support to the public administration at national, regional and local level. ENEA therefore also produces technical reports and other written and electronic material that is not included in citation indexes.

The field examined by De Leo *et al.* is limited to environmental research. As the title of our agency indicates, environment is only one of ENEA’s fields of interest. As a consequence, even within its environment department, research projects and the publications derived from them could easily escape this categorization, because they address areas such as radiobiology, toxicology, geology and numerical modelling, and often yield high-quality

publications that are not always well represented in the journals examined by the authors.

The environment department of ENEA was created in 1994 — or in 1989 under a different name and with different staff. Neither date corresponds to the period covered by De Leo *et al.*

We feel, therefore, that a comparison cannot be made in the oversimplified way followed by the authors. Their approach is flawed by differences in role, history, size, manpower characteristics and fields of publication of the institutions they analyse.

A discussion of the role of ENEA and of the other Italian research bodies is timely and necessary and should consider the distribution of manpower and of financial resources, two items on which discussions should be started and action taken, and De Leo *et al.* are going in the right direction.

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