Ethics of using employees' eggs in cloning research

SIR — The Hwang case highlights issues in human egg donation that were not addressed in your Editorial "Standards for papers on cloning" (*Nature* 439, 243; 2006). Developing clones with eggs obtained from one's employees raises serious ethical concerns (see D. Magnus and M. K. Cho *Science* 308, 1747–1748; 2005).

First, there is considerable risk that the decision to donate is made under pressure and is not entirely voluntary. Second, donors may not be adequately informed. For example, if donated eggs are sought purely for research purposes, the donor must know that they will not be used to develop therapies. Scientists, like all professionals, have an ethical imperative to serve certain socially valued goals, but they must not violate others' autonomy in the pursuit of those goals.

Human eggs are not easily obtained: the process involves trips to a clinic, ultrasound scans, injections to stimulate egg production and, when appropriate, having a probe with an attached needle guided by ultrasound inserted through the vaginal wall into the ovary to remove the eggs. Researchers using human eggs should be independent of any fertility clinics treating the women from whom the eggs came. That way, women are less likely to feel coerced into donating their eggs, and it helps ensure that clinical decisions are not motivated by either scientific or financial gain in the pursuit of these unique stem-cell lines. Cloning publications should include clear information about the steps taken to ensure that egg donors gave their informed and voluntary consent to donation.

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Ethics: China already has clear stem-cell guidelines

SIR — As scientists and ethicists who care about stem-cell research in China, we disagree with the statement in your News story "Panel clarifies stem-cell rules" (*Nature* 440, 9; 2006) that "China lacks clear national policies, with different institutes following different rules".

In fact, China's government has issued several guidelines to regulate human stem-cell research. These include guidelines on human assisted-reproductive technologies, issued by the Ministry of Health in July 2003, and ethical guidelines for research on human embryonic stem cells, jointly issued by the Ministry of Science and Technology and the Ministry of Health in December 2003. Both explicitly prohibit human reproductive cloning, and the latter is similar in principle to the guidelines proposed by the US National Academies (www.nap.edu/books/0309096537/html).

It is true that national policies on human stem-cell research in China are not laws. With some further improvement, however, we think they are adequate, as nearly all scientific research in China relies on government funding. There have been cases in China where a few medical practitioners have used human fetal tissues or cells to treat patients, without required government approvals or appropriate clinical trials. We believe that this practice is against commonly accepted principles of modern scientific research. Infringements are a matter of law enforcement against unapproved medical practices, as in any lawful and civilized country, and should not be viewed as unethical examples of human stem-cell research in China.

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Eastern European science needs sweeping changes

SIR — Your News story "Ukraine scientists grow impatient for change" (*Nature* 440, 132–133; 2006) touches on the situation and potential growth of scientific research in a single country, but the issues are relevant to all of the former Soviet bloc.

The facts are sobering. Although the average gross national product per capita in these countries is only a few times lower than in the rest of Europe, the average university ranking is an order of magnitude poorer: in the latest Academic Ranking of World Universities, only 4 of the top 123 European universities are from the former Soviet bloc. Pumping extra money into the system would make little difference. As a member of the Independent Academic Forum (www.nauka-edukacja.tubaza.pl) — a group of Polish scientists aiming to promote changes in higher education, leading to the US model — I believe the only real hope lies in creating a new generation of dynamic scientists to set the pace for academic life, which means supporting the best of the best. But much of the old guard, who attained their positions and influence under the old regime, are not up to the scientific challenges of today and resist any real change.

I believe that what we need is transparency and competitiveness: transparent records of achievements, including full publication lists, and fair and open competition for academic positions. An academic ombudsman would facilitate open discussion, and special grants for young scientists could also help. Major political and legislative decisions are called for. The Independent Academic Forum is doing its best to press for such changes.

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Reviewers peering from under a pile of 'omics' data

SIR — An increasing problem for reviewers, in providing adequate reviews for science journals, is not simply fraudulent data submission or manipulation (see Correspondence *Nature* 439, 782–784; 2006), but the information density and sheer bulk of data that now have to be supplied as part of publishing modern biological science. This is particularly true with 'omics'-type data sets (transcriptomics, proteomics, metabonomics and so on), which are now collected in parallel in systems-biology studies.

Many referees are experienced and learned scientists, but they are also very busy people who may well get several papers a week to referee. Do we really have time to read the 60-plus pages of supplementary data that often accompany a major paper? Do we even have the tools and expertise needed to analyse and check the veracity of raw 'omics' data sets? A typical data set formatted to meet MIAME (minimum information about a microarray experiment) requirements may contain millions of discrete data.

To check whether these data have been scaled, normalized and processed correctly — within a data set that might have taken a couple of postdocs two years to process — is a difficult task, even if the referee has the time, the knowledge and the right software.

In the data-rich 'omics world' of today, the referee's task has become more complex and challenging than could have been envisaged only a few years ago.

Furthermore, there is increasing demand for integrative papers that cover many types of bioanalytical measurement and multivariate statistics at different levels of biomolecular organization. The scientific community needs to reassess the way it addresses the peer-review problem, taking into account that referees are only human and are now being asked to do a superhuman task on a near-daily basis.

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