

Bush's policy stopped US gaining stem-cell lead

SIR — Your News story “Korea launches network to share cloning information” (*Nature* 437, 1077; 2005) reports the establishment of the World Stem Cell Hub, under the direction of Professor Woo Suk Hwang. Hwang's research team have developed a highly efficient recipe for producing human embryos through somatic-cell nuclear transfer (SCNT) and then extracting their stem cells (W. S. Hwang *et al. Science* 303, 1669–1674; 2004).

The announcement of the hub signals South Korea's intention to become the world's leading centre for stem-cell and therapeutic-cloning research. It also reflects how far the United States has fallen behind its competitors in this pivotal area and how much the lack of federal leadership has handicapped US efforts.

In 2000, Advanced Cell Technology (ACT) — of which one of us is vice-president for medical and scientific development — initiated a significant human therapeutic-cloning programme. ACT's ethics advisory board assisted researchers by providing ethical guidelines and supervision for a pioneering egg-donor research programme. In 2001, ACT scientists reported the creation of the first early (4–6-cell stage) cloned human embryos (J. B. Cibelli *et al. J. Regen. Med.* 2, 25–31; 2001). As early as 2002 and 2003, the team of researchers at ACT had very promising results — including what we believe were stem-cell-stage competent embryos — that seemed to be on a par with those of the South Korean team, subject to some changes in the experimental conditions.

Why did the South Koreans win this race despite our early lead?

In our view, President George W. Bush's restrictive policy on funding stem-cell research was a major factor. SCNT research is expensive — a full research programme costs hundreds of thousands of dollars each year. At that time, ACT was a privately financed company, and from the summer of 2001 on, it was operating in an extremely hostile funding environment, with no hope of federal support. There is no reason to believe that ACT was a special case. Indeed, the stem-cell area as a whole has continued to encounter difficulties in garnering sufficient financial support.

Bush also repeatedly spoke out in support of legislation in Congress that would ban all therapeutic-cloning research. Investors may be willing to accept market and research risks, but they are very reluctant to fund work that might be criminalized, and venture-capital funding dried up. By mid-2003, it had become a challenge for ACT to maintain staffing levels and meet payrolls.

In vitro fertilization clinics, too, were

unwilling to get involved. There was concern among clinic staff that they would receive adverse media publicity for participating in stem-cell research and that the physical security of staff and patients would be put at risk.

No one likes to lose a race. Apart from the egos involved here, however, the stakes for this research are important. Although the South Korean team deserve every credit for their accomplishments, the current absence of a strong US competitor in this research narrows the range of directions likely to be explored.

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Evidence of group learning does not add up to culture

SIR — Andrew Whiten and colleagues' study of group learning, “Conformity to cultural norms of tool use in chimpanzees” (*Nature* 437, 737–740; 2005), is intended to show evolutionary continuity between humans and other animals, but the authors directly make that claim only for conformity.

Jacqueline Zupp, in Correspondence (*Nature* 437, 1089; 2005), says she finds it absurd to believe that human culture and society developed without precedent among animals and adds that we “now have evidence for animal cultures, as reported in the pages of this journal”.

The experiment by Whiten and colleagues is well conceived and executed, and is entirely convincing on its own terms. But continuity between learning to open a latch that is already there, and creating, say, *The Iliad* or the pythagorean theorem, is not obvious. Are we to value the proof above what is being proved?

The continuity of the human mind with the animal mind is the most important question in human evolution, so we want to get it right. But in our rush to triumph, we should not allow our conclusions to be driven tacitly by hints and implications and the use of emotional vocabulary in a way that would never be tolerated in, say, chemistry or mathematics. Like Zupp, I am an evolutionist, and I do not wish to see our science paint itself into a corner from which the only escape leads through a gauntlet of public embarrassment.

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Is the ID debate proof of an intelligent deceiver?

SIR — In the ongoing debate over whether intelligent design (ID) should be taught as a legitimate alternative to evolution in schools (“Expert witness: the scientists who testified against intelligent design” *Nature* 438, 11; 2005), I suggest that ID could be presented as an alternative so long as it is always accompanied by a third option: intelligent deception.

This hypothesis proposes that the ID movement is motivated by an ‘intelligent deceiver’. Individuals who understand how to debate alternative scientific hypotheses would never intentionally promote religious dogma as science. So an intelligent deceiver must be at work, guiding proponents of ID to sow confusion over valid scientific debate.

To exclude intelligent deception from debates over ID versus evolution could be considered hypocritical on both legal and moral grounds. And if proponents of ID reject the hypothesis of intelligent deception, their objections would be most interesting to hear, particularly the ones that dismiss the deceiver without imperilling the designer.

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Librarians can help prevent accidental plagiarism

SIR — I agree wholeheartedly with your Editorial “Clamp down on copycats” (*Nature* 438, 2; 2005) stating that universities need to instruct students in the standards that are expected of them.

I have no doubt that some writers set out to deceive. But I wonder how much plagiarism takes place because people may not be aware of what they are doing? Librarians can make a real contribution to promoting good academic practice, by teaching about referencing and how to use reference management software. We can help academic and research colleagues in the rigorous instruction that you rightly advocate.

Keith Nockels

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