

A Posthuman Future?

"How to Regulate Science" by Francis Fukuyama, in *The Public Interest* (Winter 2002),
1112 16th St., N.W., Ste. 530, Washington, D.C. 20036.

"Regulation brings with it many inefficiencies and even pathologies," writes Fukuyama, a noted conservative thinker and author of *The End of History and the Last Man* (1992) and other books. "But in the end, there are certain types of social problems that can only be addressed through formal government control, and biotechnology is one of them."

Though it could produce incomparable benefits, such as a cure for cystic fibrosis or diabetes, biotechnology also presents immense dangers—in human cloning for reproductive purposes, in eugenically selected "designer babies," and, ultimately, in the possible loss of any distinctive meaning to being "human."

A complete ban on human cloning for reproductive purposes (as recently urged by a National Academy of Sciences panel) is justified, in Fukuyama's view, because such cloning would result in "highly unnatural" parent-child relationships and would be the entering wedge leading to "designer babies." Such a ban would also demonstrate that political control of biotechnologies can be achieved.

The point must be made even though U.S. and international efforts to curb the spread of nuclear weapons, as well as restrictions put on neuropharmacological drugs and other dangerous products of science, already give the lie to "the widespread belief that technological advance cannot be restrained."

But human cloning for reproductive purposes is an exception among the coming biotechnologies, says Fukuyama. Most others will demand "a more nuanced regulatory approach" than an outright ban. Take, for example, the diagnosis and screening of embryos for birth defects and other traits before they are implanted in the womb. "In the future," he asks, "do we want to permit parents to screen and selectively implant embryos on the basis of sex and intelligence, of hair, eye, or skin color, or sexual orientation, once these characteristics can be identified genetically?"

It will be necessary, he says, to draw lines between legitimate and illegitimate uses of the technology—between, for instance, therapy and human enhancement. "The original purpose of medicine is, after all, to heal the sick, not to turn healthy people into gods."

Existing federal agencies such as the Food and Drug Administration won't be up to the job, in Fukuyama's view. Their mandates are too narrow, and much biotech research is now privately funded. He envisions a new agency to regulate biotechnology, with "statutory authority over all research and development, and not just research that is federally funded."

If nothing is done, Fukuyama warns, science may lead humanity into "a posthuman future in which we have the capacity, slowly but surely, to alter the essence of human nature"—while losing any "clear idea of what a human being is."

Curious Science

"Fighting Chance" by Siddhartha Mukherjee, in *The New Republic* (Jan. 21, 2002),
1220 19th St., N.W., Washington, D.C. 20036.

Last fall, in the wake of the anthrax attacks on several news organizations and Capitol Hill offices, Harvard University biologist John Collier suddenly found himself thrust into the national spotlight. Just a few months before, Collier and his colleagues

had discovered a means of blocking the toxic effects of anthrax, pointing the way toward an eventual antidote. The Pentagon and the Department of Health and Human Services set aside nearly \$2 billion for antiterror research, and Senator Max Cleland (D-Ga.)