

## Political Science

*Progressives can't—and shouldn't—remove politics and values from science.*

**F**or many progressives and liberals, President Barack Obama's March 9 announcement on stem-cell research affirmed the now-conventional wisdom that virtue lies in protecting science from the interference of politics. Fulfilling a campaign promise, the president repealed his predecessor's stem-cell funding restrictions and pledged to ensure that "scientific data is never distorted or concealed to serve a political agenda—and that we make scientific decisions based on facts, not ideology."

Scientists and stem-cell research advocates celebrated. The president of the Christopher & Dana Reeve Foundation said he was thrilled that the new Obama policy will "remove politics from science." A vice president of the Juvenile Diabetes Research Foundation lauded the commitment to "keep politics out of science." John Kessler, director of the Northwestern University Stem Cell Institute, recalled Bush's funding limit and labeled it a "really, really unwelcome intrusion

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of politics into science.”

The policy is certainly a victory for progressives. But the assumptions embedded in its reception deserve close examination. Embedded assumption number one is that Bush’s restriction on federal funding of embryonic stem cell research was part of a broad “anti-science” agenda. Assumption number two is that this policy constituted an illegitimate incursion of politics into science. The third assumption—and the one of greatest import as progressive politics tries to keep pace with scientific developments—is that we want to insulate science from moral values and political commitments.

Let’s look at each assumption in turn. Characterizing the Bush Administration’s general approach as “anti-science” is indeed accurate. Its policies were a pernicious brew of fundamentalist values and corporate interests; its record of suppressing and distorting research on climate change, endangered species, air pollution, and other matters was abysmal. But Bush’s specific argument against embryonic stem-cell research was not an instance of manipulating scientific findings or fashioning Orwellian misrepresentations. Rather, he clearly grounded his policy in the moral objection to destroying human embryos: He limited federal funding to existing cell lines on the grounds that “the life and death decision [for those embryos] has already been made.” This may be ideology, but “ideology” is often what we call political values with which we disagree.

The third assumption, though, is the most potentially troubling over the long term. It is not “anti-science” or illegitimate to bring political values to bear on science policy—even when it’s Bush or his religious supporters doing it. To suppress scientific evidence or distort research findings because they are politically inconvenient, to disregard expert advice and relevant technical information—these practices are anti-science, and the Bush Administration made a habit of them. But to consider social and ethical values in the course of crafting policy is not only appropriate, but necessary. And disagreement about social and ethical values, or about how to apply them, is a necessary aspect of democratic political contestation.

Progressives were correct both to attack the Bush Administration’s “anti-science” conduct and to oppose the fundamentalist right’s influence on its science policy decisions. But they took a wrong turn when they blurred the two. Intense animus against religious conservatives’ bioethical beliefs, coupled with extreme enthusiasm about stem-cell research, led many progressives toward positions that implicitly or explicitly ruled social values out of order in science policy.

Carried to an extreme, which it sometimes was, this meant that some progressives came to discount the importance of regulation and oversight of

scientific practice and applications; overlooked conflicts of interest and corporate encroachments in science-related activities; and shortchanged the need for broad public discussion of the social and moral implications of science policy. Surely this is the wrong approach to a progressive politics of science.

Our job, now that we're not fighting a rearguard action every day, is to determine the appropriate relationship between science and politics, and between science and state. The task is particularly urgent with regard to fast-evolving human biotechnologies: cloning for research and reproduction; sex selection and "designer babies"; race-specific drugs; "personalized genomics"; and markets in kidneys, eggs, and wombs. These emerging or proposed applications have been catapulted into public awareness by technical and commercial developments over the past decade, and can be referred to as "biopolitics."

The birth of this kind of biopolitics was unfortunately timed. It coincided with the partisan polarization of recent years, which drowned out thoughtful deliberation about anything with a connection to the politics of reproduction, including many human biotechnologies. But genetic and reproductive biotechnologies raise political challenges that go beyond embryos. They pose questions about social justice and the common good, about democratic accountability and sensible regulation. Some of them present social predicaments that are unprecedented in human experience.

These are the questions we must ponder: How will human biotechnologies reshape our sense of ourselves, our relationships, the shape and feel of the world we occupy together? Who will profit, who will lose, and who will survive in the biotech age? Celebrity scientists, biotech entrepreneurs, pharmaceutical companies? Attractive college students whose eggs are in demand? Poor villagers in developing countries who sell their kidneys or rent their wombs? People with Down syndrome? Techno-utopian ideologues who think human improvement depends on biological "enhancements" rather than social change? What rules will govern human biotech practices, and who will enforce them?

There are no easy answers. While genetic, reproductive, and biomedical technologies hold great potential for scientific advances and medical improvements, they could also lead to developments that would deepen the divide between haves and have-nots and could even corrode our commitments to one another as members of a single human community. Grappling with these issues intelligently requires acknowledging the roles of social values and politics; it also requires assessing how we've done so far—and unfortunately, some recent approaches represent impediments to a progressive biopolitics shaped by values of social justice, inclusion, and democratic governance. Below are three examples.

## The Stem-Cell Wars

Much that was misguided about the progressive politics of science during the Bush era began as a reflexive response: If the Bush Administration and its religious base were against something, we were for it. This posture was particularly evident in the stem-cell wars. Progressives came to accept the social conservatives' framing of the controversy as one completely defined by differences about the moral status of human embryos, and they paid little attention to an array of other ethical and social concerns that the stem-cell endeavor raises. Too often, they endorsed unrealistic predictions about stem-cell breakthroughs and cures, overlooked conflicts of interest among stem-cell researchers and commercial biotech firms, and excused lapses in basic oversight of lavishly funded state stem-cell programs. And many progressives failed to notice the particularly troubling concerns raised by cloning-based stem-cell research: the large numbers of women's eggs it requires and the significant health risks posed by their collection; the unlikelihood that if it ever produced patient-specific treatments they would be affordable; and the need for a federal prohibition on reproductive cloning to minimize the chances of rogue efforts to produce cloned humans.

The most enthusiastic advocates were guilty of boundless hyperbole. Exaggerated claims about the likelihood and imminence of stem-cell cures were much in evidence during 2004, both in the presidential campaign and in the California ballot initiative that provided \$3 billion in state money for stem-cell research. The campaign for that measure adopted the tagline "Countdown to Cures." It blanketed the state with TV ads featuring people suffering from diabetes, Parkinson's, and other diseases, and scientists in white coats—their university appointments prominent, their commercial affiliations unmentioned—suggesting they'd be cured by Christmas.

On the national scene, vice presidential candidate John Edwards told a crowd in October 2004 that embryonic stem-cell research would allow people like Christopher Reeve to "get up out of that wheelchair and walk again." In a speech at the Democratic convention, Ron Reagan Jr. predicted that cloning-based stem-cell research could produce for each of us a "personal biological repair kit." The rhetoric grew so heated that Princeton University President and geneticist Shirley Tilghman, a supporter of such research, warned that "some

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of the public pronouncements in the field of stem-cell research come close to over-promising at best and delusional fantasizing at worst.”

Unfortunately, statements like Reagan’s and Edwards’s came not just from politicians and campaign consultants but also from scientists and officials at disease-advocacy organizations. By the normal conventions of scientific conduct, such claims would be considered irresponsible at best. But this was war. And in war, you’re either friend or foe, and you fight by any means necessary. Writing after Obama’s stem-cell announcement, *Slate*’s William Saletan compared stem-cell advocates’ approach to Karl Rove’s mode of attacking critics of torture. For proponents of embryo research, Saletan wrote, “[t]he war on disease is like the war on terror: Either you’re with science, or you’re against it.”

Enthusiasm for stem-cell research led some beyond over-the-top rhetoric toward dismissal of basic tenets of accountability and public oversight. Consider the California case. The 2004 ballot initiative established the California Institute for Regenerative Medicine (CIRM) to disperse the billions of dedicated public dollars. Though CIRM is nominally a public agency, the initiative mandated that its 29-member governing board be dominated by representatives of California’s largest research institutions, biotech companies, and disease-advocacy organizations. This provision built institutional conflicts of interest into the structure of the program—and indeed, as David Jensen of the *California Stem Cell Report* points out, 18 institutions with representatives on the board have now received portions of \$552 million in grants.

The problems didn’t end there. The initiative effectively insulated CIRM from oversight by the state legislature and exempted it from California sunshine laws about open meetings. Another provision seemed to put the activities funded by the new agency above state law altogether:

[T]he Institute will develop its own scientific and medical standards to carry out the specific controls and intent of the Act, *notwithstanding... any other current or future state laws or regulations* dealing with the study and research of pluripotent stem cells and/or progenitor cells [emphasis added].

Given that some California legislators opposed embryonic stem-cell research, proponents understandably wanted safeguards and defended the initiative’s exemptions on that basis. It’s also understandable when the companies and principals in a field try to minimize regulation and oversight. But it was notable when progressive organizations and leaders that typically champion government transparency and accountability either failed to notice the initiative’s startling exemptions or dismissed concerns about them, and wound up endorsing a law that codified prohibitions on public oversight.

## The Pursuit of the Perfect Baby

Progressives are more likely than Americans of most other political sensibilities to emphasize the public interest, social solidarity, and an active role for government in promoting them. But during the late-'90s tech boom and into the Bush years, some progressives tilted too far toward individual rights and a minimalist notion of government, especially in matters connected to reproduction. And progressives were at least as inclined as other Americans toward the consumer-oriented ethos of “self-improvement”—a notion that sometimes extended to the way we have children, and even to the kind of children we have.

This tendency was in evidence at a 1998 conference called “Engineering the Human Germline,” which drew 1,000 people to hear influential scientists promote the development of genetic and reproductive technologies that would allow altering the traits of future children and generations. This procedure, termed “inheritable genetic modification” or “germline engineering” in scholarly literature and “designer babies” in the popular media, has been a topic of speculation for decades. Both skeptics and proponents agree it would likely be profoundly consequential, setting in motion *Gattaca*-like social and market dynamics that could exacerbate, and create new forms of, social disparities and discrimination.

Organizers of the UCLA event, which was covered on the front pages of *The New York Times* and *The Washington Post*, acknowledged that one of its goals was to make inheritable genetic modification “acceptable” to the public, and that a key component of their strategy was to avoid regulation. Princeton University molecular biologist Lee Silver—who in his 1997 book, *Remaking Eden*, predicted the emergence of a genetic elite that he termed the “GenRich” (he called the nonengineered 90 percent “Naturals”)—noted approvingly that “this country is unique in that there are no federal regulations of [in-vitro fertilization] clinics,” adding, “I don’t see why you need extra regulations for germ-line engineering.” Nobel Laureate and DNA pioneer James Watson—who in 2007 was disgraced after making racist comments in a newspaper interview—told the conference, “I think our hope is to stay away from regulations and laws whenever possible.”

Given that these scientists and futurists were proposing genetic interventions that they anticipated would biologically alter the human species and possibly introduce a new social system of genetic castes, their antipathy to “regulations and laws” makes perfect sense. And in fact, a decade after these remarks, the United States remains a global outlier on inheritable genetic modification: Unlike almost four dozen countries on every continent, it has no federal policies to rule out the designer-baby future that so entices Watson, Silver, and others of their ilk.

The technologies themselves have progressed. Scientists can produce genetically modified animals: goats that lactate spider silk, mice that run mazes faster

and better than their non-engineered counterparts, rabbits and monkeys that glow in the dark because of a jellyfish gene in every one of their cells. These kinds of inheritable genetic modifications are still imprecise enough that trying to replicate them in human beings would violate international prohibitions on human experimentation. But it's not too soon to address them in our thinking and in our laws.

The United States also remains an outlier on regulation of assisted reproduction. Progressives rightly support reproductive technologies to treat infertility and to give gays and lesbians options for forming families. But few have criticized the operation of a fertility industry that informed observers call a “wild West.” In a recent issue of *Nature*, for example, former chair of Britain's Human Fertilisation and Embryology Authority (HFEA) Ruth Deech asserted that in “the

United States, assisted reproduction is nearly an unregulated black market, guided by toothless ‘rules’ from non-regulatory bodies.”

Deech made these comments well before two recent scandals that brought massive critical attention to the U.S. baby business: the birth of IVF octuplets—which bequeathed to our

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language the inelegant neologism “Octomom”—as well as the advertisement by a Los Angeles fertility clinic of a program to screen embryos, not just for sex, but also hair, eye, and skin color.

Many countries—but not the United States—already have policies that preclude the use of embryo screening for non-medical purposes, and prohibit reproductive cloning and inheritable genetic modification. Several countries have gone further and adopted comprehensive policy structures, informed by clearly stated social principles, to govern reproductive and genetic technologies. Typically, a government agency licenses fertility clinics and laboratories that conduct research on human embryos, and sets rules for permitted procedures. These arrangements allow for regulations to be modified as needed, but provide a mechanism for ensuring that clinics and laboratories are following them.

The United Kingdom, for example, initiated a process of public input and deliberation soon after the first in vitro birth in 1978. This led to a law creating the Human Fertilization and Embryology Authority (or HFEA), which oversees both assisted reproduction and research with human embryos. The statute requires that the majority of HFEA's governing board be people other than scientists involved in the activities being considered. By requiring and issuing licenses,

HFEA is able to maintain standards and prevent abuses. While a few decisions have been controversial, its principles and process are widely supported both by the public and practitioners of assisted reproduction and embryo research. Canada is following a similar track.

A number of studies have concluded that the UK's HFEA can serve as a rough model for oversight of reproductive genetics in the United States. One was a multi-year project by 14 prominent scholars and bioethicists led by Erik Parens and Lori Knowles of the Hastings Center. Their analysis, published in 2003, called for evaluating the broad social consequences as well as the safety and efficacy of these biotechnologies.

### **The Abortion Divide**

Another reason for progressive reluctance to regulate human biotechnologies is rooted in the enduring conflict over abortion rights. Despite long years of campaigning, the United States has yet to establish abortion as a human right grounded in support for women's dignity and well-being, and in the considered belief that women's freedom to decide whether to bear a child contributes to the kind of society we want to build. Instead, we have encouraged a public understanding of abortion rights as an issue of "choice," which can too easily sound like a matter of utilitarian consumer preference. In the legal realm, we have relied on arguments for "privacy"—an all-too-fragile judicial reed that was, in fact, initially adopted by defenders of abortion rights as a tactical legal expedient.

During the Bush years, some reproductive-rights advocates became disturbingly libertarian in their assessments of even the most extreme reproductive technologies. A major national reproductive rights organization in fact came close to officially endorsing human reproductive cloning as an extension of women's choice. The issue arrived on the formal agenda of Planned Parenthood Federation of America several years after the 1997 announcement of the birth of Dolly the cloned sheep had triggered speculation about the prospect of cloned human children. PPFA put in place a discussion process that was to result in adopting an organizational position on reproductive cloning.

At the time—this was 2001—the Christian Right had already staked out an anti-cloning position, and today's scientific consensus that reproductive cloning would be so unsafe as to constitute unethical human experimentation had not yet formed. Although opinion surveys were registering 90 percent or more opposition to human reproductive cloning (a number unchanged to this day), some choice advocates were arguing for the logical and political necessity of treating it as a matter best left to the individual. To gauge sentiment about the issue, a senior PPFA staff member prepared several hypothetical scenarios



describing different reasons for using reproductive cloning and presented them for discussion to break-out groups at a meeting of its board.

The most extreme of the concocted scenarios was called *Happy Workers: Creation of a Free Market Empire*. It described a company making a large profit with sales of a gadget for which consumer demand is inexhaustible. The owners face a challenge, however, because the final step in the manufacture of the gadget must be done manually, and “small, dexterous human hands are needed.” They identify a worker who is particularly skilled at this task, and propose to produce 1,000 clones of her. They approach her with an offer of \$1 million now, and another \$5 million after the clones are able to perform the job once they reach 16 years of age. The company will assume complete responsibility for rearing and caring for the clones. And “[s]ince the sole purpose of the clones will be to do the work in the last step of manufacture, they will be engineered to require little sleep and to have few ambitions other than performance of their work.”

The groups were asked to discuss whether it should be “permissible to produce clones for such a purpose.” The person who wrote the scenario, obviously with the intention of probing the limits of her colleagues’ unwillingness to consider public policy in the reproductive arena, told me all the groups that considered it concluded that “the decision should be a matter of individual choice.” Though most of the discussants found the scenario disturbing, she said, no one was willing to support legislation that would prevent it from happening.

The *Happy Workers* scenario is so far-fetched as to be almost comical, but the inability of senior reproductive-rights advocates to reject the production of cloned insomniac slaves is anything but. Fortunately, PPFA ultimately heeded other voices arguing that there is no contradiction between standing firmly in favor of abortion rights and in opposition to human reproductive cloning.

In more recent years, the reluctance of leaders in PPFA and other reproductive rights organizations to engage the challenges raised by new biotechnologies has begun to fade. Partly in response to the emergence of a “reproductive justice” framework, many have undertaken a searching discussion of the limitations of the “choice” framework, including its inadequacy for grappling with the issues that reproductive and genetic innovations raise. Increasingly, reproductive-rights advocates acknowledge the disability rights movement’s critique of prenatal screening and selective abortion of fetuses affected by the very conditions with which they are successfully living. They are examining the problem of sex selection, prompted both by anti-choice legislation that uses it as an excuse to restrict abortion, and by the spread of the new pre-pregnancy sex selection methods, embryo screening, and sperm sorting. They are also voicing concerns about the

class dimensions of surrogacy and egg “donation” (though some continue to insist that selling eggs and renting wombs is no different from other waged labor, and should be a private matter). Despite their rejection of any policy approach that would involve questioning women about their reasons for terminating a pregnancy, there is emerging appreciation for the way that new technologies shift “certain reproductive decisions from matters of private choice to ones of public concern, regardless of the moral status of fetuses and embryos,” in the words of Sam Berger, formerly of the Center for American Progress.

### **Corporate Influence and Techno-Faith**

Two further issues merit brief discussion, because their potential consequences for a science that places itself above politics are profound indeed. Over fifty years ago, Jonas Salk became famous for developing the polio vaccine. When news broke that field trials of the vaccine had been successful, Salk was interviewed by Edward R. Murrow on “See It Now.” “Who owns the patent on this vaccine?” Murrow asked. Salk replied: “Well, the people, I would say. There is no patent. Could you patent the sun?”

That response is all but unimaginable now. The new commercial circumstances of techno-science have created widely acknowledged problems: conflicts of interest, dangerous drugs loose on the market, patent blockages, and a serious under-representation of the public interest. Most scientists remain ethical, responsible, and devoted to expanding knowledge and developing technologies that benefit humanity. But this is an age of corporate science, in which commercial dynamics drive bottom lines, shape products, and at times inform the scientific results that underlie them.

Some progressives and liberals seem to have become blurry about the commercial threats to responsible science. Most of the Bush Administration’s objectionable moves in science policy took the form of catering to its corporate supporters. Indeed, the Union of Concerned Scientists’ compilation of 92 instances of “political interference in science” by the Bush Administration listed only ten that can be explained by its fundamentalist pandering (including the distortion of research on abstinence-only education, overruling the advice of scientific panels about over-the-counter access to emergency contraception, and raising doubts about the efficacy of condoms in preventing the spread of HIV/AIDS). The other 82—the years of denying the findings of climate research, the relentless efforts to undercut food and drug regulation, the vengefulness toward whistleblowers—are easily understandable as part of a corporate-friendly agenda.

We miss this distinction, in part, because we are too wedded to the notion of science as “truth,” under threat from religious zealots. A case in point, also

provided by the Union of Concerned Scientists (of which I am a member): In 2007, the winning entry in the organization's annual cartoon contest was literally an illustration of the uncritical celebration of science and the anti-regulatory inclination that many progressives had come to accept. It depicts the word "TRUTH" in large letters on the ground, surrounded by the piles of dirt from which it has been excavated. In one corner, a scientist in a white coat cleans the letters with a whisk broom. In another corner, a man labeled "federal government" is busy shoveling the dirt back on.

In this view, good-guy scientists simply extract truth from nature, and then work to protect it from being sullied by government. This perspective ignores or downplays the commercial interests that often distort science and influence regulatory agencies, undermining public safety and the common good. In a way, it is analogous to Alan Greenspan's view of the market: Science is seen as an absolute good, and social evil as rooted in efforts to control it. Like the free-market mantra, it is debilitating to the prospects of progressive social change.

## **The Future of Biopolitics**

Tensions between private choice and public concern, and between individual autonomy and social justice, will continue to exist among progressives. But we should leave behind the days of liberals aligning with libertarians on biopolitical matters. Our dramatically changed economic situation reminds us of our shared vulnerability, and of what we gain from social solidarity. Our new president has recalled us to responsibility and citizenship. These are welcome portents for a politics of science generally, and for biopolitics specifically, that elevate the common good and public responsibility over excessive individualism and consumerist identities.

The challenges posed by human genetic, reproductive, and biomedical technologies are among the thorniest and the most consequential we face. A truly progressive biopolitics, one that welcomes the benefits of human biotechnologies while opposing their harmful, excessive, and unprogressive uses, will require both new ways of thinking and new policy approaches.

Five principles can guide this new biopolitical thinking. First, we should acknowledge that the practices and products of science are inherently political and that decisions about powerful genetic, reproductive, and biomedical procedures and products affect us collectively, shaping our communities and our world. That inescapable fact makes it legitimate—in fact obligatory—to subject these technologies to social negotiation and control. Rather than trying to keep politics out of biotechnology policy, we need appropriate ways to bring our political values to bear on matters including establishing funding priorities,

protecting research subjects, setting scientific and medical standards, and safeguarding the powers and independence of regulatory agencies.

Second, we need systematic, inclusive, and robust public conversations about the consequences of reproductive, genetic, and biomedical technologies and the values that they support or undermine. In a pluralistic society, simply establishing habits of thoughtful deliberation about biotechnology policies would be a big step forward. Meaningful public deliberation will have to include the experiences and beliefs of fellow citizens with whom we disagree. But the painful lessons that progressives have lately learned about ceding “values” to our opponents apply to science politics and biopolitics as well as to the general political arena.

Third, the known and potential social consequences of biotechnologies and their applications—not just their safety and efficacy—should be systematically included in our evaluations. Policy makers and the concerned public

should particularly assess new biotechnologies for their impacts on socially and economically vulnerable populations. The effects of assisted reproduction on women and children provide one example. We should also discourage biotechnological innovations and

explanations that revive the myth of race as a fixed biological category. As University of California Hastings law professor and Center for Genetics and Society Senior Fellow Osagie Obasogie has proposed, we should adopt “race impact assessments” of applications such as race-specific pharmaceuticals, genetic ancestry tests, and forensic DNA databases.

Fourth, we should draw on the lessons of previous efforts by socially concerned scientists and their supporters—the “atomic scientists,” environmentalists, public health advocates, and others—to safeguard human health, protect the environment, and bolster responsible science. Policy makers and political thinkers should bring to bear on human biotechnologies the kinds of critical analysis that we apply to powerful energy, chemical, and agricultural technologies. More specifically, we should learn from environmentalism the importance of eschewing overly exuberant expectations of new technologies and inadequate regard for their potentially harmful consequences. We should be wary of inappropriate technological fixes to social problems, and we should cultivate a precautionary sensibility that protects the public interest and the common good.

Fifth, we must affirm the legitimacy and the urgency of government oversight of human biotechnologies. Private-sector contributions to technological

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development are needed. But market mechanisms are not a substitute for public policy, and they must be carefully regulated. As we would in other areas, we should avoid regulatory capture, eliminate conflicts of interest, and maximize transparency, accountability, and wide participation in policy making.

What can be expected to result if these principles for a progressive biopolitics are applied? Currently, a solid though not overwhelming majority of Americans—between 53 and 58 percent since 2004, according to the VCU Life Sciences Survey—supports embryonic stem-cell research. Support for the use of cloning techniques in stem-cell research is weaker—between 35 and 52 percent, depending on how the question is phrased. And opposition to human reproductive cloning and inheritable genetic modification is very strong.

A truly progressive biopolitics would comfortably align with the values that a significant majority of Americans share, and with the human biotechnology policy models that a number of countries have pioneered. Developing political agreement for effective policies will be difficult, but we have three kinds of wind at our backs. First, the authorization for the Bush-appointed President's Council on Bioethics runs out on September 30. As of yet, there have been no official signs from the White House about whether the Council will be allowed to expire, or about whether or how it will be replaced. Either way, Obama's opportunity to establish a new body with a mandate to examine the social consequences of human biotechnologies represents an opening.

Obama himself constitutes the second reason for optimism. The president clearly supports scientific innovation; at the same time, he is inclined toward sensible regulation and a search for "common ground" in controversial areas. These commitments were apparent in his stem-cell announcement, which both expanded federal funding and drew a much-needed line against human reproductive cloning.

The third wind at our backs may be one that shifts an entire zeitgeist. Our economic system is undergoing more than a temporary stumble. We have reason to hope that many Americans will emerge from the current troubles with dimmed enthusiasm for the kind of individual excesses and market free-for-all on which the commercialization of reproductive genetics relies, and with greater appreciation for the common good and for government oversight to protect it.

Recent developments in the United States offer the best chance in years to meet the challenges of new biotechnologies. If we rise to the occasion, we can craft and codify rules that reflect both the emerging international consensus and our own commitments and values, which channel the power of new and emerging biotechnologies toward the well-being of future generations. ■