"Moral Questions of an Altogether Different Kind:" Progressive Politics in the Biotech Age

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Charles Darwin's theory of evolution was far more than an advance in scientific understanding. It famously upended traditional ways of thinking about the origins of life and the place of humanity in history and the cosmos. Especially in the United States, some religious believers came to see the theory as a challenge to basic tenets of their faith, which opened up societal and political rifts that remain gaping today. But recent developments in human biotechnology have the potential to surpass the political and cultural intensity triggered by those earlier debates.

The study of evolution is at heart an explanatory endeavor. Human biotechnologies—applications of reproductive, genetic, and biomedical science and related emerging fields including nanotechnology and synthetic biology—offer tools as well as explanations. They promise, and sometimes deliver, results that in ancient times were thought to be achievable only by divine intervention: they heal the sick, let the crippled walk again, and give children to the barren. They act directly on our bodies, behaviors, and minds and alter the way we understand ourselves in the process.

Many biotechnology products and practices enjoy and deserve widespread support across the political spectrum. Among these are new kinds of drugs and other medical treatments; innovative diagnostic tests that can identify disease while it is more amenable to cure; forensic DNA analyses that help identify the guilty and exonerate the innocent; and more. All can be misused, to be sure, and many need to be regulated. But we do not demand and should not expect perfection from any of our tools, including those based in biotechnology.

Nevertheless, some applications of these emerging technologies pose challenges to core progressive and liberal values.[1] Consider a few current

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[1] The meanings and histories of progressivism and liberalism are complex and contested. Despite important differences, the labels are often used interchangeably. Here they refer to a broad political perspective in the United States that emphasizes social justice and human rights, and that supports government regulation and oversight to provide certain public services and to curb the excesses of the market. By contrast, a more libertarian approach (in both its left and right variations) supports much greater latitude for market dynamics, and emphasizes individual liberty in all matters unless immediate and tangible harms to others can be

practices: Poor villagers in developing countries sell their kidneys and rent their wombs to global elites.[2] Clinical researchers scour underdeveloped regions for human subjects; at home, they look to immigrants, prisoners, and people with no access to health care.[3] Fertility clinics and brokers offer as much as $100,000 to the best and brightest on America's college campuses in exchange for their eggs.[4] Drugs and gene tests based on molecular differences between populations threaten to revive discredited notions about biology and race.[5] Biotech scientists involve themselves in profit-making ventures, while continuing to receive large amounts of public funding.[6]

Moreover, these technologies are taking us into uncharted moral and political waters. The recent controversy over embryonic stem cell research may be merely an early warning of biopolitical storms already on the horizon. Biotechnology-based products and procedures now under development will pose social and ethical questions unprecedented in human history. Some are close at hand. When and how should children conceived with high-tech assistance learn that they have two or even three biological mothers?[7] Should researchers transfer human genes or brain cells into non-human animals?[8] Should they, as has recently been proposed, attempt to use cloning techniques to resurrect a Neanderthal?[9]

Most socially consequential is the prospect of manipulating the traits of future children and generations. Some enthusiasts advocate the development of designer baby technologies that would give parents the option to engineer their children's appearance and talents and would allow the current genera-

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demonstrated. The term "classical liberalism" is used below with reference to the argument that public policy should be neutral with respect to substantive moral and religious controversies.

[2] For background on the modern trade in organs, see Council of Eur. Directorate Gen. of Human Rights & Legal Aff. & U.N., *Trafficking in Organs, Tissues and Cells, and Trafficking in Human Beings for the Purpose of Organ Removal* (Oct. 13, 2009) (*prepared by* Arthur Caplan, Beatriz Domínguez-Gil, Rafael Matesanz & Carmen Prior), *available at* http://www.coe.int/t/dghl/monitoring/trafficking/Docs/News/OrganTrafficking_study.pdf.

[3] *See, e.g.*, Joann Loviglio, *Prison Inmate in 1960s Recalls "Guinea Pig" Tests*, Associated Press, Dec. 3, 2007.

[4] *See, e.g.*, Bella English, *Recession Spurs Egg and Sperm Donations*, Boston Globe, Apr. 7, 2009, at Metro 1.

[5] *See* Osagie K. Obasogie, Ctr. for Genetics & Soc'y, Playing the Gene Card? 1–7 (2009), *available at* http://www.geneticsandsociety.org/downloads/complete_PTGC.pdf.

[6] *See, e.g.*, Jim Hopkins, *Universities Gird for Battle for Bioscience Supremacy*, USA Today, June 24, 2005.

[7] Children born through assisted reproduction procedures have two biological mothers when third-party egg donation and/or pregnancy (often called "surrogacy") is involved. A few dozen children have been born after a technique in which the nuclei of one woman's eggs were fused with the cytoplasm of another woman's eggs. If this technique were used to create an egg and then an embryo that was then transferred into a surrogate, the resulting child would have three biological mothers. For an early review of the consequences of this procedure for family law, see Janet L. Dolgin, Defining the Family: Law, Technology, and Reproduction in an Uneasy Age 148–54 (1997).

[8] For a discussion of the ethics of creating human/non-human chimeras, see Henry T. Greely et al., *Thinking About the Human Neuron Mouse*, Am. J. Bioethics, May 2007, at 27.

[9] For a discussion of the ethical implications of reviving past species such as Neanderthals from their genetic material, see Nicholas Wade, *Scientists in Germany Draft Neanderthal Genome*, N.Y. Times, Feb. 12, 2009, at A12.

tion to take control of human evolution. Undeterred by the eugenic abuses of the twentieth century, these enthusiasts eagerly anticipate the emergence of a consumer-based eugenics in the twenty-first century. They view human improvement as better realized by biological enhancement than by social change and are strategizing about how best to encourage the emergence of what they call "transhumans" or "post-humans."[10]

Taken together, these visions constitute sociopolitical narratives whose effects on politics and culture are being felt even in advance of their technical feasibility. Several prominent philosophers have grappled with the biopolitical dilemmas they presage. In *The Future of Human Nature,* the influential German social theorist Jürgen Habermas wrote that "the breadth of biotechnological interventions raises moral questions that are not simply difficult in the familiar sense but are of an *altogether different kind.* The answers touch on the ethical self-understanding of humanity as a whole."[11] Harvard political and moral philosopher Michael Sandel has argued that advances in genetic and other technologies will force us "to confront questions largely lost from view in the modern world—questions about the moral status of nature, and about the proper stance of human beings toward the given world."[12]

As we face these unprecedented biotechnological powers that pose novel moral questions and cause an unavoidable political engagement with spiritual questions, where can liberals and progressives look for guidance? How can we prevent harmful uses of human biotechnologies while preserving our commitment to science as a reliable method for producing shared knowledge? How can we open the public sphere to concerns about the ways in which certain applications of human biotechnology could undermine the common good and moral values, yet protect the public sphere from the narrow-mindedness and coercion that liberal tolerance is meant to avoid?

Unfortunately, two currents in recent liberal and progressive thought leave us ill equipped for these challenges. One is a tendency to embrace technological and scientific developments without adequate attention to the risks they pose and the deep impact that they can have on our politics and culture. The other is a reluctance to directly address moral controversies, especially when strongly held religious beliefs are in play. These currents converge in the quarrel between science and religion that has dogged the United States over the past century.

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[10] Books that promote a "transhuman" and "post-human" future include NICHOLAS AGAR, LIBERAL EUGENICS: IN DEFENCE OF HUMAN ENHANCEMENT (2004); JOHN HARRIS, ENHANCING EVOLUTION: THE ETHICAL CASE FOR MAKING BETTER PEOPLE (2007); RAY KURZWEIL, THE SINGULARITY IS NEAR: WHEN HUMANS TRANSCEND BIOLOGY (2005); RAMEZ NAAM, MORE THAN HUMAN: EMBRACING THE PROMISE OF BIOLOGICAL ENHANCEMENT (2005); LEE M. SILVER, REMAKING EDEN: CLONING AND BEYOND IN A BRAVE NEW WORLD (1997); and GREGORY STOCK, REDESIGNING HUMANS: CHOOSING OUR GENES, CHANGING OUR FUTURE (2003).

[11] JÜRGEN HABERMAS, THE FUTURE OF HUMAN NATURE 14–15 (Hella Beister & William Rehg trans., Polity Press 2003) (2001).

[12] MICHAEL J. SANDEL, THE CASE AGAINST PERFECTION 9 (2007).

This Essay takes issue with both these currents. It argues that human biotechnologies, like other powerful technological innovations, should be subject to democratic governance and shaped by public policies. And it asserts that progressives and liberals must seriously engage the moral controversies and qualms that human biotechnologies raise.

"Moral Values" in American Politics

From the 1960s until the past few years, most liberals and progressives treated morality and religion in politics quite gingerly.[13] The dominant left and center view during these decades was liberal in the classical sense: it saw religious freedom and religious tolerance as important, but considered religious commitment a matter of personal belief and individual choice. Moral and ethical values were seen as private concerns, unwelcome in the public sphere, and certainly not matters on which government policy should take sides.

This version of liberalism is meant to protect individual liberties and to guard against religious intolerance—critically important goals. But its shortcomings are also significant: it discourages efforts to address the moral dimensions of public policy and dampens public deliberations about shared values and the common good. When classical liberalism tilts toward a libertarian prioritization of personal liberty, it tends to shortchange social justice and solidarity; when joined with market liberalism, it provides few conceptual resources for resisting incursions of commercial dynamics into ever larger areas of both public and private life. These deficits have been apparent in many liberals' and progressives' recent encounters with the politics of human biotechnology.

Both pragmatism and principle counsel that progressives and liberals should more robustly engage the moral values and spiritual questions that human biotechnologies put on the political agenda, and should consider the role of religious traditions in grappling with these issues. The pragmatic argument is that many Americans care deeply about the moral and spiritual aspects of political issues and want public policies and electoral campaigns to address them. Unless we secular liberals and progressives work to lessen the suspicion and antagonism that often divide us from people of faith, we will continue to cede crucial ground to Republicans and religious fundamentalists.

This perspective gathered steam in the aftermath of the 2004 presidential election. Politics and religion writer Amy Sullivan put the pragmatic case bluntly: "Trying to understand American politics without looking at religion would be like trying to understand the politics of the Middle East

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[13] *See* E.J. Dionne Jr., Souled Out: Reclaiming Faith and Politics After the Religious Right 34–39 (2008).

without paying attention to oil."[14] And in a symposium of political writers pondering "the question of why the Democratic Party—which has now lost five of the past seven presidential elections and solidified its minority status in Congress—keeps losing elections,"[15] Robert Reich wrote:

> I'm not saying Democrats have to adopt my particular moral positions. But unless or until Democrats return to larger questions of public morality, they won't inspire the American public. Plans and policies are important, of course. But there's no substitute for offering a vision of what we can become as a nation—and giving citizens the faith we can get there.[16]

The principled argument for cultivating the habit of moral inquiry is that doing so enriches the moral imagination and social vision of progressives and liberals. Such a project is likely to involve inquiry into religious traditions, if only because individuals and societies so often derive their moral understandings from them. And while the "new atheists" ferociously denounce religion (the subtitle of Christopher Hitchens' 2007 book, for example, is *How Religion Poisons Everything*[17]), they do not—and cannot—deny the salience of vital moral questions. The history of moral thought is inextricably interwoven with the history of religion, and progressives and liberals can learn from that long tradition even while we reject dogmatism and intolerance.

Michael Sandel addresses these issues in his 2009 book *Justice: What's the Right Thing to Do?*[18] He acknowledges that "[l]iberal political theory was born as an attempt to spare politics and law from becoming embroiled in moral and religious controversies."[19] But, he says, requiring public policy to remain neutral about questions of the good life—about the kind of society we are striving together to build—is a mistake, and a consequential one: "Deciding important public questions while pretending to a neutrality that cannot be achieved is a recipe for backlash and resentment. A politics emptied of substantive moral engagement makes for an impoverished civic life."[20] Sandel believes that opening politics and the public sphere to substantive moral deliberations is also a way to undercut the appeal of dogmatic and intolerant variations of religion. If liberals and progressives fail to address the moral and ethical dimension of public life, he argues, people will seek out comprehensive moral visions from other, potentially more danger-

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[14] AMY SULLIVAN, THE PARTY FAITHFUL: HOW AND WHY DEMOCRATS ARE CLOSING THE GOD GAP, at vii (2008).

[15] Editor's Note, *Why Americans Hate Democrats—A Dialogue*, SLATE, Nov. 4, 2004, http://www.slate.com/id/2109188/ (on file with the Harvard Law School Library).

[16] Robert Reich, *Gotta Have Faith*, SLATE, Nov. 4, 2004, http://www.slate.com/id/2109190 (on file with the Harvard Law School Library).

[17] CHRISTOPHER HITCHENS, GOD IS NOT GREAT: HOW RELIGION POISONS EVERYTHING (2007).

[18] MICHAEL J. SANDEL, JUSTICE: WHAT'S THE RIGHT THING TO DO? (2009).

[19] *Id.* at 243.

[20] *Id.*

ous sources. Avoiding these matters is "an open invitation to narrow, intolerant moralisms. Fundamentalists rush in where liberals fear to tread."[21]

As a presidential candidate, Barack Obama grappled with these political and moral realities in his 2006 Call to Renewal keynote address. He noted America's deep and widespread religiosity and acknowledged the antipathy of many religious conservatives to the idea of evolution, noting that "substantially more people in America believe in angels than they do in evolution."[22] But Obama did not conclude, as many do, that religious citizens are ignorant, unworthy, or unapproachable. Instead, he counseled progressives to reach out to people of faith and to "communicate our hopes and values in a way that's relevant to their own."[23] This advice was undoubtedly based in part on hard-nosed political calculation, but the way of thinking it bespeaks is no cynical ploy. "More fundamentally," as Obama went on to say, "the discomfort of some progressives with any hint of religion has often prevented us from effectively addressing issues in moral terms."[24]

The deep and damaging political polarization of recent decades has made thoughtful deliberation about matters of meaning and morality difficult. The impulse to bracket them—to shunt them into private life or avoid them altogether—is strong. But the price of doing so is far too high.

Lessons of the Stem Cell Wars

How have the shifting progressive and liberal sensibilities about "addressing issues in moral terms"[25] played out in the biopolitical realm? The Bush-era battles over embryonic stem cell research clearly demonstrated the need for a revised progressive and liberal approach to the politics of human biotechnology, and the Obama Administration has crafted one.

The stem cell wars generated polarized stereotypes of progressives as "pro-science" and religious conservatives as "anti-science." In fact, religious conservative opposition to embryonic stem cell research was (at least in many cases) based not on antipathy to science, but on a moral conviction that human embryos should not be destroyed even in a worthy endeavor such as medical research. In reaction, many liberals and progressives came to equate moral concerns about human biotechnology solely with this theological commitment to the personhood of human embryos.

The rancor and polarization that developed during the Bush years kept the status of embryos in the spotlight and consigned other moral and political issues raised by stem cell research to the shadows. Concerns about stem

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[21] *Id.*

[22] Barack Obama, Keynote Address at the Call to Renewal Conference: Building a Covenant for New America (June 28, 2006) (transcript available at http://www.barackobama.com/2006/06/28/call_to_renewal_keynote_address.php).

[23] *Id.*

[24] *Id.*

[25] *Id.*

cell research that had nothing to do with the personhood of embryos were typically ignored. But a number of progressives did raise such concerns. Women's health advocates questioned the subset of stem cell research that involves a cloning technique because it requires large numbers of human eggs, the acquisition of which poses risks to the young women who provide them.[26] Some progressives who support embryonic stem cell research (including my own organization, the Center for Genetics and Society) nonetheless opposed the 2004 California voter initiative earmarking three billion dollars for the endeavor because it enshrines conflicts of interest in the state agency it established and violates basic precepts of democratic accountability and governance.[27] The hyperbolic exaggerations about the imminence of medical breakthroughs, in which so many stem cell research supporters indulged, were a deep disservice both to political and scientific integrity.[28]

The partisan stem cell divide also obscured important political complexities. Notable conservatives such as Nancy Reagan and Orrin Hatch supported embryonic stem cell research, as did numerous liberal and moderate religious bodies.[29] Similarly, the larger politics of human biotechnology confound conventional ideological alignments. Liberal bioethicist Erik Parens takes up this point in a recent essay on the *Science Progress* blog of the Center for American Progress:

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[26] *See, e.g.*, Diane Beeson & Abby Lippman, *Egg Harvesting for Stem Cell Research: Medical Risks and Ethical Problems*, 13 REPROD. BIOMED. ONLINE 573 (2006), *available at* http://www.rbmonline.com/Article/2503; Judy Norsigian, *Egg Donation for IVF and Stem Cell Research: Time to Weigh the Risks to Women's Health*, DIFFERENT TAKES, Spring 2005, *available at* http://www.geneticsandsociety.org/article.php?id=1972.

[27] For views of liberals and progressives who support embryonic stem cell research in general but raised questions about the 2004 California stem cell ballot measure, see, for example, Ellen Goodman, *Stem Cells on the Ballot*, Boston Globe, Oct. 24, 2004, at E11; Daniel Sarewitz, *Stepping Out of Line in Stem Cell Research*, L.A. TIMES, Oct. 25, 2004, at B11; David Winickoff, *Prop. 71 a Risky Experiment in Squandering Public Monies*, S.F. CHRON., Oct. 17, 2004, at E3. For a thorough critique of Proposition 71, see CTR. FOR GENETICS & SOC'Y, THE CALIFORNIA STEM CELL PROGRAM AT ONE YEAR: A PROGRESS REPORT (2005), *available at* http://www.geneticsandsociety.org/downloads/200601report.pdf. Additional sources are collected at Ctr. for Genetics & Soc'y, CGS's Campaign Website Opposing Proposition 71 (Nov. 10, 2004), http://www.geneticsandsociety.org/article.php?id=324#opinion (on file with the Harvard Law School Library).

[28] In the words of Dr. Shirley Tilghman, President of Princeton University and a supporter of embryonic stem cell research, "[S]ome of the public pronouncements in the field of stem cell research come close to over-promising at best and delusional fantasizing at worst. In either case, such pronouncements do not serve the long-term goal of developing effective treatment for diseases." Shirley Tilghman, Address to the Stem Cell Institute of New Jersey (Nov. 11, 2004) (transcript available at http://www.princeton.edu/president/speeches/20041111/index.xml).

[29] Senator Hatch's support for liberalized stem cell laws is detailed in Andrea Stone, *Lawmakers' Stem Cell Proposals Vary Widely*, USA TODAY, July 26, 2005, at 4A. For Nancy Reagan's views, see, for example, Kevin Eckstrom, *Catholic Church Struggles to Recast Stem Cell Debate*, WASH. POST, July 23, 2005, at B9. For a compilation of religious groups' positions on stem cell research, see Pew Forum on Religion & Pub. Life, Religious Groups' Official Positions on Stem Cell Research (July 17, 2008), http://pewforum.org/docs/?DocID=319 (on file with the Harvard Law School Library).

> Our views about biotechnology just do not align neatly with our party affiliations. It's awfully hard, after all, to construe left-leaning critics of "the new eugenics," or left-leaning critics of medicalization and normalization, or left-leaning environmentalists as *boosters* of science and technology. And it's equally hard to construe right-leaning defenders of embryonic stem cell research, or right-leaning biotech-free-marketeers, much less the Ronald Reagan of Star Wars, as *knockers*.[30]

The Obama Administration has now significantly cooled the stem cell wars. The President lifted the Bush Administration's restrictions on federal funding of research that uses stem cells derived from embryos created but not needed for fertility treatments.[31] He also directed the National Institutes of Health to draw up research guidelines—"strict guidelines," he said, "which we will rigorously enforce, because we cannot ever tolerate misuse or abuse."[32] Firmly rejecting the view that early-stage embryos have the rights of personhood, President Obama went on to affirm the importance of applying moral judgments to scientific work. And he articulated a clear position on human reproductive cloning: "It is dangerous, profoundly wrong, and has no place in our society, or any society."[33]

This statement is significant because it goes beyond the narrow safety and procedural considerations that many researchers and bioethicists cite as the only legitimate reasons to forgo efforts to clone human beings and to pursue other widely opposed forms of human genetic manipulation. Instead, while recognizing that science and technology are uniquely positioned to tell us what can be done, it asserts that social values, mediated and expressed through democratically accountable institutions, must determine what should be done.

Now that the new administration has lowered the temperature on the stem cell issue, how should liberals and progressives think about the difficult questions involved in assessing and regulating human biotechnologies? As a starting point, we should take stock of some recent missteps, in the hope that we can do better on the biotech-related challenges to come. The sections that follow consider the tendency of liberals and progressives to avoid the substantive moral dilemmas posed by biotechnological innovations; to elevate individual liberty over social justice in considerations of biotech issues; to downplay the excess of market dynamics that liberals appropriately chal-

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[30] Posting of Erik Parens to Science Progress, http://www.scienceprogress.org/2009/02/does-science-threaten-democracy/ (Feb. 9, 2009) (on file with the Harvard Law School Library) (reviewing YUVAL LEVIN, IMAGINING THE FUTURE: SCIENCE AND AMERICAN DEMOCRACY (2008)).

[31] *See* Exec. Order No. 13,505 § 1, 74 Fed. Reg. 10667 (Mar. 11, 2009).

[32] President Barack Obama, Remarks at the Signing of Stem Cell Executive Order and Scientific Integrity Presidential Memorandum (Mar. 9, 2009) (transcript available at http://www.whitehouse.gov/the_press_office/remarks-of-the-president-as-prepared-for-delivery-signing-of-stem-cell-executive-order-and-scientific-integrity-presidential-memorandum/).

[33] *Id.*

lenge in other spheres; and to champion science—especially biotech science—as unquestionably beneficial and properly protected from public policy and oversight.

Bioethics: Thinning the Debate, Narrowing the Questions

Bioethics emerged in the mid-twentieth century out of concerns about the ethical and philosophical implications of then-new procedures and technologies, including end-of-life decision making, organ donation, human experimentation, and genetic engineering. In the field's early decades, bioethicists often grappled with the broad social consequences of new developments in the life sciences. Later, much of their attention shifted to important but narrower topics involving individuals' relationships with research and medicine, such as informed consent, patient safety, and rules for the conduct of research.

This narrowing has been especially unfortunate because bioethics is widely seen as the most appropriate locus of deliberation about emerging biotechnologies. Though bioethicists typically present themselves as experts rather than as spokespeople, their work and their words can too easily function as a substitute for *democratic participation* in biotechnology-related policy matters.

John Evans' 2002 book *Playing God? Human Genetic Engineering and the Rationalization of Public Bioethical Debate* examines the American bioethics debate about human genetic engineering between 1959 and 1974.[34] Evans argues that this was the period during which the scope of bioethical deliberations shifted from a richer and "thicker" way of thinking that focused on meanings and values to a "thinner" mode of rationality focused on means and methods.[35] In other words, attention to values and ethical norms was crowded out by discussions about procedures; moral issues were reduced to technical ones.

The 2005 guidelines for stem cell research issued by the National Academies of Sciences (NAS) are an example of this trend.[36] One section addresses concerns raised by chimeras that are created by adding human stem cells to animals or animal embryos.[37] Most scientists consider such chimeras to be legitimate research tools. Yet many Americans—scientists and lay people alike—are uneasy about research that may produce higher animals with human traits. Just how far should researchers go in their work to humanize animals? What if these experimental creatures begin to display some degree of human consciousness?

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[34] John H. Evans, Playing God? Human Genetic Engineering and the Rationalization of Public Bioethical Debate (2002).

[35] *Id.* at 12.

[36] Nat'l Research Council of the Nat'l Acads., Guidelines for Human Embryonic Stem Cell Research (2005), *available at* http://www.nap.edu/catalog.php?record_id=11278 [hereinafter Nat'l Acads.].

[37] *Id.* at 49–50.

The NAS guidelines acknowledge the possibility that "cell transfer [could] result in the animal's acquiring characteristics that are valued as distinctly human"[38] and concur that the "idea that human neuronal cells might participate in 'higher order' brain functions in a nonhuman animal, however unlikely that may be, raises concerns that need to be considered."[39] But rather than actually moving to such a consideration, the guidelines merely advise that reviewers ask the question, "If visible human-like characteristics might arise, have all those involved in these experiments, including animal care staff, been informed and educated about this?"[40]

This is at best an end run around rocky ethical and moral terrain. And while it may be understandable for research guidelines to avoid what could well become a political quagmire, most liberals and progressives have also declined to address these concerns in other spheres.[41] Instead, when George W. Bush proposed a ban on "human-animal hybrids" in his 2006 State of the Union address,[42] liberal bloggers and bioethicists took the opportunity to ridicule him.[43]

True, Bush's way of addressing the issue was confused and misleading, and his choice of the State of the Union as a venue was strange. The scathing liberal and progressive responses to Bush's comment hit these easy targets dead center. But they missed the mark by failing to acknowledge that many Americans have reasonable concerns about lab-made animals in which "visible human-like characteristics might arise."[44] Some took the view that the only concerns that exist are those based in religious belief, and that any concern connected to religion should be dismissed. In short, their attitude seemed to be that only the scorn-worthy could possibly imagine that there is anything to worry about. As liberal science blogger PZ Myers put it, "Once again, the ignorance and the bigotry of the religious right wins out over reason and humanitarianism."[45]

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[38] *Id.* at 50.
[39] *Id.* at 40.
[40] *Id.* at 50.
[41] An exception is the work of developmental biologist Stuart Newman and social critic and policy advisor Jeremy Rifkin. The two filed a patent on a "human-ape chimera" in order to alert the public to the technical capacities being developed. For accounts, see Mark Dowie, *Gods and Monsters*, MOTHER JONES, Jan.–Feb. 2004, at 48; Interview by Tom Bearden with Stuart Newman, Professor of Cell Biology and Anatomy at N.Y. Med. College (July 2005) (transcript available at http://www.pbs.org/newshour/bb/science/july-dec05/chimeras_newman-ext.html).
[42] President George W. Bush, State of the Union Address (Jan. 31, 2006) (transcript available at http://www.washingtonpost.com/wp-dyn/content/article/2006/01/31/AR2006013101468.html).
[43] *See, e.g.*, Jonathan D. Moreno, *President Bush's "Hybrid" Problem*, CTR. FOR AM. PROGRESS, Feb. 16, 2006, http://www.americanprogress.org/issues/2006/02/b1426267.html (on file with the Harvard Law School Library); Pharyngula, http://scienceblogs.com/pharyngula/2006/02/president_panders_to_antimanim.php (Feb. 1, 2006, 11:31 EST) (on file with the Harvard Law School Library).
[44] NAT'L ACADS., *supra* note 36, at 50.
[45] Pharyngula, *supra* note 43.

Mockery is thus one response to moral concerns about biotechnology. Another is to retreat to procedural recommendations, such as additional training for animal caretakers. A third response, expressed by bioethicist Paul Root Wolpe in an otherwise positive review of Evans' *Playing God*, acknowledges that "substantive rationality" (Max Weber's term for the "thick" approach Evans favors) has a place in liberal societies—and that this place is outside of policy bodies such as bioethics commissions:

> Our society is designed to have its discussion of ultimate ends as part of civil society—in its newspapers, from its pulpits, and around watercoolers. Presidential commissions and the resulting legislative recommendations such commissions make are probably better off staying away from discussions of ultimate ends.[46]

This is, in fact, the classic liberal view. Many progressives also adhere to it, as do many government institutions, including the federal agency that most directly deals with human biotechnologies, the Food and Drug Administration (FDA). The FDA assesses the safety and efficacy of the products it regulates; it does not consider social consequences or moral questions.[47]

Outside the United States, by contrast, such concerns are widely considered a legitimate part of public debate and public policy. This is the case in many European countries, most of whose populations are far more secular than Americans. In 1998, for example, the European Parliament and the Council of the European Union issued a directive forbidding patents on inventions that contravene what they term "public morality."[48] Similar provisions exist in the patent laws of many countries. Even the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) of the World Trade Organization, the primary international agreement governing intellectual property, permits denials if a patent would be contrary to "*ordre public*, or morality."[49]

Unlike the United States, Europe has explicitly prohibited the human biotechnology practices that generate the most concern, including reproductive human cloning, inheritable genetic modification, and sex selection for

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[46] Paul Root Wolpe, Book Review, 109 AM. J. SOC. 215, 216 (2003).

[47] *See generally* U.S. Food & Drug Admin., Legislation, http://www.fda.gov/RegulatoryInformation/Legislation/default.htm (on file with the Harvard Law School Library).

[48] *See* Council Directive 98/44, art. 6, 1998 O.J. (L 213) 13, 18, *available at* http://europa.eu.int/eur-lex/pri/en/oj/dat/1998/1_213/1_21319980730en00130021.pdf; *see also* EUR. UNION FACT SHEET, THE BIOTECHNOLOGY INDUSTRY 4 (2005), *available at* http://www.europarl.europa.eu/ftu/pdf/en/FTU_4.8.9.pdf ("Life sciences and biotechnology address issues involving the life and death of living organisms. They raise fundamental questions of human existence and life on Earth, the very factors that have shaped the deepest religious, ethical and cultural heritage of humanity. The EU is a community of law and of shared fundamental values and human rights while respecting differences in cultural and ethical values and public morality. This is also reflected in the EU Charter on Fundamental Rights. Consideration of ethical issues and respect for cultural and ethical values are an integral part of EU action.").

[49] Council for Trade-Related Aspects of Intellectual Property Rights, *Note by the Secretariat: Review of the Provisions of Article 27.3(b) Summary of Issues Raised and Points Made* 10, IP/C/W/369/Rev.1 (Mar. 9, 2006), *available at* http://www.wto.org/english/tratop_E/trips_e/ipcw369r1.doc.

nonmedical purposes. These prohibitions are justified by an appeal to "human rights and fundamental freedoms" in the Council of Europe's 1998 *Convention on Human Rights and Biomedicine*.[50] Canada has adopted similar provisions in its Assisted Human Reproduction Act (AHRA) of 2004.[51] The AHRA includes an explicit "declaration of principles" that mentions a number of values unlikely to be specifically cited in U.S. policy, including "dignity and rights in the use of these technologies and in related research."[52] In addition, the AHRA says that "trade in the reproductive capabilities of women and men and the exploitation of children, women, and men for commercial ends raise health and ethical concerns that justify their prohibition."[53]

Other biotech-related policy documents also include explicitly moral language. The recently drafted Declaration of Istanbul on Organ Trafficking and Transplant Tourism, for example, says that "[o]rgan trafficking and transplant tourism violate the principles of equity, justice, and respect for human dignity and should be prohibited."[54] In comparison, the U.S. National Organ Transplant Act of 1984, which also prohibits people from selling their organs, does not include any comparable language.[55]

Not so long ago, however, many American liberals and progressives were comfortable with moral appeals. Eleanor Roosevelt, for example, was Chair of the United Nations Commission that drafted the Universal Declaration of Human Rights, which asserts the legitimacy of "meeting the just requirements of morality, public order and the general welfare in a democratic society."[56]

Delivering a Baby: Justice and Liberty, Morality and Markets

Most progressives and liberals take social justice as a touchstone commitment but consider individual autonomy to be decisive in matters that bear on reproduction. The battle for abortion rights has become all but synonymous with the term "choice," and arguments that draw on other values have long been more muted. For example, abortion rights advocates seldom

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[50] Council of Europe, Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine, Apr. 4, 1997, ETS No. 164, Preamble, *available at* http://conventions.coe.int/treaty/en/treaties/html/164.htm; *see also* Council of Europe, Additional Protocol on the Prohibition of Cloning Human Beings, Jan. 12, 1998, ETS No. 168, *available at* http://conventions.coe.int/treaty/en/treaties/html/168.htm.

[51] Assisted Human Reproduction Act, 2004 S.C., ch. 2 (Can.), *available at* http://laws.justice.gc.ca/en/A-13.4/.

[52] *Id.* at 1.

[53] *Id.* at 2.

[54] International Summit on Transplant Tourism and Organ Trafficking, *The Declaration of Istanbul on Organ Trafficking and Transplant Tourism*, 3 Clinical J. Am. Soc'y & Nephrology 1227, 1228 (2008).

[55] *See* 42 U.S.C. § 274e (2006).

[56] Universal Declaration of Human Rights, G.A. Res. 217A, ¶ 29, U.N. Doc. A/810 (Dec. 10, 1948).

ground their case in a social vision—in the argument, for instance, that women's freedom to decide whether and when to bear children is necessary to the kind of society we want to build.

During the Bush years, some reproductive rights advocates extended their understanding of "choice" to encompass support for even the most extreme reproductive technologies, including reproductive cloning. In this view, the right to decide whether and when to bear a child is conflated with a right to determine the precise traits of a child that one will bear.[57] In fact, in 2002, Planned Parenthood Federation of America came close to officially endorsing human reproductive cloning as an extension of women's reproductive freedom.[58] Fortunately, Planned Parenthood instead affirmed that strong support for abortion rights in no way precludes clear opposition to the creation of cloned children.

In recent years Planned Parenthood and other reproductive rights groups, partly in response to the reproductive justice approach developed by women of color organizations, have begun to appreciate the limitations of the "choice" framework, including its inadequacy for grappling with the issues that reproductive and genetic innovations raise. Legal scholar and reproductive justice advocate Dorothy Roberts, for example, reminds us that the "dominant view of liberty reserves most of its protection only for the most privileged members of society."[59] She asserts that "[r]eproductive freedom is a matter of social justice,"[60] and that "procreation's special status stems as much from its role in social structure and political relations as from its meaning to individuals."[61] And Roberts is appalled that advocates of the new eugenics can present themselves as champions of freedom even as they "dismiss[ ] the possibility that genetic enhancement might exacerbate race and class disparities."[62] In a similar vein, Samuel Berger writes, in a thoughtful essay in *The Nation* titled "A Challenge to Progressives on Choice," that new technologies "are quickly shifting certain reproductive decisions from matters of private choice to ones of public concern, regardless of the moral status of fetuses and embryos."[63]

In some cases, the technologies to which Berger refers are driven as much by the market as by technical developments. Consider, for example, the booming practice of pregnancy outsourcing, now nearly a half-billion-dollar-a-year business in India.[64] Fertility clinics there recruit poor rural wo-

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[57] *See* JOHN A. ROBERTSON, CHILDREN OF CHOICE 22–42 (1996) (explicitly making this argument under the rubric "procreative liberty").

[58] *See* Marcy Darnovsky, *Political Science*, DEMOCRACY, Summer 2009, at 36, 43–44.

[59] DOROTHY ROBERTS, KILLING THE BLACK BODY: RACE, REPRODUCTION, AND THE MEANING OF LIBERTY 294 (1997).

[60] *Id.* at 6.

[61] *Id.* at 312.

[62] *Id.* at 298.

[63] Samuel Berger, *A Challenge to Progressives on Choice*, THE NATION, July 18, 2007, http://www.thenation.com/doc/20070730/berger (on file with the Harvard Law School Library).

[64] *American Gays Looking to India Surrogate Industry to Have Children*, HINDUSTAN TIMES, Oct. 12, 2009, *available at* http://www.dnaindia.com/health/report_american-gays-

men to serve as surrogates, housing them in dormitories during their pregnancies. The clinics closely monitor the surrogates' diets and sexual contacts and require them to abide by other behavioral restrictions and medical stipulations—some insist on Caesarean section births—enumerated in contracts that the surrogates sometimes cannot read. The clinics' clients are far more affluent, though not necessarily wealthy by developed world standards. Surrogacy costs in India are about one-fifth of U.S. rates,[65] putting it within reach for middle-class Americans, Europeans, and others.

Many commissioning parents turn to India because commercial surrogacy is illegal where they live. This is the case in the United Kingdom, Canada, many European nations, and some American states.[66] India is also attractive because surrogates recruited there are highly unlikely to make a serious bid to keep the baby, as has happened in several high-profile cases in the United States.[67]

The payment that Indian surrogates receive for their services is typically a windfall for them. Reporters who have traveled to India to report on the "rent-a-womb" phenomenon have no trouble finding surrogates who receive more money for one pregnancy than they could make in ten or more years of other work. One told *Marie Claire* reporter Abigail Haworth that helping her husband in his scrap-metal business typically nets the two of them $1.20 to $1.45 a day, while a successful surrogate pregnancy would bring in $5,500. That, she said, would "give my children a future."[68]

How should we evaluate this new global industry? Some observers—including some feminists and social liberals and progressives, as well as market liberals and economic conservatives—argue that women must be free to sell their eggs and rent their wombs; that these practices are no different from other forms of wage labor, and should be treated as private matters. Articles about commercial surrogacy in women's magazines are often written as heart-warmers with fairy-tale endings. They almost always take the point of view of the contracting parents and almost never interrogate their

looking-to-indian-surrogate-industry-to-have-children_1297969; *see also Surrogacy a $445 mn Business in India*, Econ. Times, Aug. 25, 2008, *available at* http://economictimes.indiatimes.com/News/News_By_Industry/Healthcare__Biotech/Healthcare/Surrogacy_a_445_mn_business_in_India/rssarticleshow/3403841.cms.

[65] Abigail Haworth, *Womb for Rent*, Marie Claire, Aug. 2007, at 124.

[66] For country-level surrogacy policies, see BioPolicyWiki, http://www.biopolicywiki.org (follow "Country" hyperlink, then follow desired country's hyperlink) (on file with the Harvard Law School Library). For the U.S. situation, see Ctr. for Am. Progress, Guide to State Surrogacy Laws (Dec. 17, 2007), http://www.americanprogress.org/issues/2007/12/surrogacy_laws.html/ (on file with the Harvard Law School Library).

[67] *See* Stephanie Saul, *Building a Baby with Few Ground Rules*, N.Y. Times, Dec. 13, 2009, at A1 (examining the U.S. legal gray area surrounding surrogate custody). For accounts of specific surrogate custody battles, see Robert Hanley, *Surrogate Mother Tells of Desire to Keep Baby*, N.Y. Times, Jan. 9, 1987, at B3; John Horton, *Triplets' Custody Awarded to Father; Toddlers in Tug of War between Dad, Surrogate*, Cleveland Plain Dealer, Apr. 22, 2006, at A1; Rene Stutzman, *Surrogate Mom can Keep Baby, Judge Rules*, Orlando Sent., Oct. 11, 2007, at B1.

[68] Haworth, *supra* note 65.

desire for a genetically related child.[69] In a 2007 segment of the *Oprah Winfrey Show* titled "Wombs for Rent," the media mega-star told her eight million viewers that surrogacy outsourcing is not exploitation; rather, it is a beautiful example of women helping women and a "confirmation of how close our countries can really be."[70]

Others find "reproductive tourism"[71] deeply troubling, and argue that we should not extend the ethos and dynamics of the marketplace to pregnancy and childbearing. In this view, such transactions should be what Michael Walzer calls "blocked exchanges," closed to commercial exchange.[72] While many accounts of commercial surrogacy avoid mention of justice or equality concerns, Abigail Haworth writes in *Marie Claire* that some consider the Indian surrogacy market "another example of third-world exploitation" and "globalization gone mad."[73] She notes that "the system certainly lends itself to the criticism" that it "exploit[s] poor women."[74] Similarly, Michael Sandel points out that surrogates' consent is hollow given the prevailing conditions of vast inequality and asserts that there is something more fundamental at stake: "[T]he creation of a paid pregnancy industry on global scale—as a deliberate policy in poor countries, no less—heightens the sense that surrogacy degrades women by instrumentalizing their bodies and reproductive capacities."[75]

The feminist sociologist Arlie Hochschild, reporting in *The American Prospect* about her interviews with Indian surrogates and surrogacy brokers, expresses mixed sentiments, as do most of the women to whom she gives voice. The material benefits that a surrogate pregnancy brings are compelling. But Hochschild notes that the "ideal of the de-personalized pregnancy" that commercial surrogacy celebrates "is eerily reminiscent of Aldous Huxley's 1932 dystopian novel *Brave New World*, in which babies are emotionlessly mass-produced in the Central London Hatchery."[76] Reaching beyond the typical language of American liberalism and progressivism, she asks, "What, if anything, is too sacred to sell?"[77]

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[69] In India as elsewhere, contract pregnancy now almost always involves an egg from a woman other than the surrogate—sometimes it is provided by the intended mother, and sometimes by a third party who is almost always paid.

[70] *The Oprah Winfrey Show: Wombs for Rent* (Harpo Productions, Inc. television broadcast Oct. 9, 2007)

[71] In another new market twist, a Florida fertility clinic is recruiting American egg donors with an ad in college newspapers offering cash plus a two-week trip to India "planned around your academic schedule." *See* Posting of Marcy Darnovsky to Biopolitical Times, http://www.biopoliticaltimes.org/article.php?id=4745 (June 30, 2009) (on file with the Harvard Law School Library).

[72] *See* MICHAEL WALZER, SPHERES OF JUSTICE 100–03 (1983).

[73] Haworth, *supra* note 65.

[74] *Id.*

[75] SANDEL, *supra* note 18, at 101.

[76] Arlie Hochschild, *Childbirth at the Global Crossroads*, THE AMERICAN PROSPECT, Oct. 2009, at 25, 27.

[77] *Id.* at 25.

In India, commercial surrogacy exemplifies—as it intensifies—the social inequalities that characterize the global economy. Wherever it takes place, it turns gestation and childbirth into a market transaction. It is difficult to see how support for this new form of exploitation can co-exist with political commitments to restraining market excesses and expanding social justice.

Techno-skepticism and Techno-triumphalism

In the mid-twentieth century, progressives took stock of science's growing financial and political clout, its ties to corporate agendas and military might, its claims on the public purse and the public imagination, its newfound ability to destroy human civilization, and its increasingly apparent abuses of the environment. They raised critical questions about the social goals of scientific and technological innovation, about its effects on democracy and the distribution of power, and about its share of societal resources. They founded the modern environmental movement, one of the most enduring social movements of our era. Their concerns were expressed largely in secular terms, but their critique of technology was shared and given an explicitly moral grounding by some of the era's most thoughtful left-leaning religious figures.

One example among many was Abraham Joshua Heschel, the philosopher and rabbi who worked to build a modern Judaism respectful both of ancient tradition and modern accomplishments, and who participated actively in the movements for civil rights and against the war in Vietnam. In a short 1964 essay titled "The Moral Dilemma of the Space Age," Heschel warned that "the sheer dynamics of modern scientific and technological developments interfere with the human capacity for decision."[78] He acknowledged that in earlier times, science's "emancipation from the church—its freedom from the dominance of religious dogma—was a cause of pride and celebration."[79] But, he continued, the dynamic has changed; science has now come into "conflict with humanity." Heschel cautioned that "power, even if prompted by moral objectives, tends to become self-justifying and creates moral imperatives of its own."[80] On this basis, he argued against investing billions per year in space:

> On any moral or ethical basis, when we can overlook the suffering of humanity in our childish delight in our ability to place monkeys and men in orbit around the earth, we are ill-prepared spiritually and morally for the vast accumulation of power which we are achieving through science.[81]

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[78] Abraham J. Heschel, *The Moral Dilemma of the Space Age*, *in* Moral Grandeur and Spiritual Audacity 216, 216 (Susannah Heschel ed., 1996).

[79] *Id.* at 217.

[80] *Id.*

[81] *Id.* at 218.

Heschel issued his cautions in the face of widespread popular support for America's investment in the "space race." His perspective was strongly opposed by futurists who were far more interested in technological revolutions than in social change or morally engaged spirituality. In 1975, space technology enthusiasts formed the L5 Society to promote their vision of space colonies. Its sensibility was libertarian; many in its orbit, so to speak, went on to advocate a variety of techno-utopian fantasies. Its antipathy toward social solidarity and its hostility to religious tradition are embedded in its slogan, "The meek shall inherit the earth. The strong and the wise keep moving."[82]

Such assertions of technological triumph and trivializations of spirituality were echoed a quarter-century later by James Watson, the Nobel Laureate who helped to deduce the helical structure of DNA. In 1989, Watson told *Time* magazine, "We used to think our fate was in our stars. Now we know, in large measure, our fate is in our genes."[83] In a 2000 address to the British Parliamentary and Scientific Committee, he asked, "[I]f scientists don't play god, who will?"[84]

Watson is also an advocate of a new eugenics enabled by advances in genetic and reproductive technologies. At a 1998 University of California, Los Angeles (UCLA) conference called "Engineering the Human Germline," organized by a small but disturbing number of influential scientists who share these views, Watson told the audience:

> I can't indicate how silly I think it is [the sanctity of the gene pool]. I mean, we have great respect for the human species. . . . But saying we're sacred and should not be changed? Evolution can be just damn cruel, and to say that we've got a perfect genome and there's some sanctity? I'd like to know where that idea comes from, because it's utter silliness. We should treat other people in a way that maximizes the common good of the human species. That's about all we can do.[85]

The UCLA conference was attended by a thousand people and covered on the front pages of *The New York Times* and *The Washington Post*.[86] Among the speakers was Princeton University biologist Lee Silver, notorious for predicting that emerging technologies will result in the division of humanity into separate castes (and eventually separate species): the ruling

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[82] *See* Posting of Marcy Darnovsky to Biopolitical Times, http://www.biopoliticaltimes.org/article.php?id=4745 (May 14, 2009) (on file with the Harvard Law School Library).

[83] Leon Jaroff et al., *Science: The Gene Hunt*, TIME, Mar. 20, 1989, at 62, 67.

[84] Steve Connor, *Nobel Scientist Happy to 'Play God' With DNA*, THE INDEPENDENT (London), May 17, 2000, at 7.

[85] James D. Watson, *The Road Ahead: A Panel Discussion*, *in* ENGINEERING THE HUMAN GERMLINE 73, 85 (Gregory Stock & John Campbell eds., 2000).

[86] Gina Kolata, *Scientists Brace for Changes In Path of Human Evolution*, N.Y. TIMES, Mar. 21, 1998, at A1; Rick Weiss, *Engineering the Unborn: Genetic Cures That Cross Generations*, WASH. POST, Mar. 22, 1998, at A1.

"GenRich" and their inferiors, the "Naturals."[87] At the UCLA event, Silver was thrilled that "we now have the power to seize control of our evolutionary destiny."[88] With similar enthusiasm, conference organizer Gregory Stock wrote the following year that inheritable genetic modification "will force us to re-examine even the very notion of what it means to be human [as] we become subject to the same process of conscious design that has so dramatically altered the world around us . . . . Through this technology, we will seize control of our own evolution . . . ."[89]

The UCLA conference was not strictly an academic affair. Its goal, Stock explained to *Nature Biotechnology*, was to make inheritable genetic engineering "acceptable" to the public.[90] Such techno-enthusiasm is extreme, but these advocates are hardly fringe figures. Perhaps because several of them have high public profiles and have won prestigious scientific awards, few scientists or other public intellectuals challenged their open embrace of technologies that are likely to create entirely new forms of human inequality. For the most part, liberals and progressives were also silent.

Science's White Knights?

By the 1990s and early 2000s, critical thinking about powerful new technologies had dimmed in progressive circles. This trend accelerated in the confrontation with the George W. Bush Administration's pattern of suppressing scientific evidence, distorting research findings, and disregarding experts whenever their advice was politically inconvenient.[91]

Progressives were clearly correct to oppose this egregious approach to science policy. But they took a wrong turn when they interpreted what Chris Mooney called the "Republican War on Science" as primarily a religious crusade rather than one also significantly driven by corporate interests.[92] They also erred when they fought back by emptying their approach to science and technology policy of moral content. Science policy expert and social theorist Daniel Sarewitz points out some of the costs of downplaying the moral dilemmas thrown up by many scientific developments:

> [O]n the one hand [we] shield our scientific enterprise from the rigors of moral debate in the name of free scientific inquiry, and on the other demand that our moral debate be regulated by the language of science in the name of intellectual rigor or economic

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[87] *See* Silver, *supra* note 10, at 4–7.

[88] Lee M. Silver, *Reprogenics*, *in* Engineering the Human Germline, *supra* note 85, at 57, 58.

[89] Gregory Stock, *The Prospects for Human Germline Engineering*, Telepolis, Jan. 29, 1999, http://www.heise.de/tp/r4/artikel/2/2621/1.html (on file with the Harvard Law School Library).

[90] *See* Jeffrey J. Fox, *Germline Gene Therapy Contemplated*, 16 Nature Biotech. 407 (1998).

[91] *See* David Malakoff, *White House Denies Playing Politics With Science*, 303 Science 1446 (2004).

[92] Chris Mooney, The Republican War on Science (2005).

> freedom. The result is a highly restricted domain of permissible conversation, and an increasing willingness to stake the future of humanity not on our admittedly imperfect processes of negotiating competing values and interests in light of our moral foundations, but instead on the accelerating capacity of science and technology to remake the world in any and every way that it can.[93]

During the Bush years, liberals' and progressives' unqualified defense of science led to additional unintended consequences. They too often discounted the importance of public regulation and oversight; overlooked conflicts of interest and corporate encroachments; and portrayed science as an endeavor above and outside social values and power dynamics, a protected zone from which political "interference" should be excluded.[94]

In some quarters, this attitude has persisted in the post-Bush era. A case in point concerns the issue of paying young women to provide eggs for cloning-based stem cell research.[95] Egg extraction has been common in the fertility field for several decades. While it poses both short-term and long-term health risks to women who undergo it, there have been very few studies to determine the frequency and seriousness of the risks and adverse reactions.[96]

In the fertility context, the benefit of egg extraction is clear: a significant fraction of such procedures results in a baby being born. Cloning-based stem cell research, by contrast, is a speculative endeavor that has not yet produced any stem cell lines. For years, some researchers and advocates made fanciful claims about the imminence and importance of cloning-based stem cell work. In the 2004 presidential elections, it became a Democratic cause célèbre. At the party's national convention that year, Ron Reagan, Jr. asserted that cloning would soon provide each of us with our own "personal biological repair kit standing by at the hospital."[97]

Since that time, the prospects for cloning-based stem cell research have diminished considerably.[98] In late 2005, a major scientific scandal erupted when celebrity Korean researcher Hwang Woo Suk, the only scientist ever to claim to have produced stem cells from cloned embryos, was found to have

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[93] Daniel Sarewitz, Scientizing the Soul: Research as a Substitute for Moral Discourse in Modern Society, Address Before the BA Festival of Science 8 (Sept. 8, 2003) (transcript available at www.cspo.org/ourlibrary/documents/BA9-03-distrib.doc).

[94] Darnovsky, *supra* note 58, at 37–38.

[95] Cloning-based stem cell research is also known as "therapeutic cloning," "research cloning," and "somatic cell nuclear transfer" (SCNT).

[96] *See* Diane Beeson & Abby Lippman, *Egg Harvesting for Stem Cell Research: Medical Risks and Ethical Problems*, 13 REPROD. BIOMED. ONLINE 573, 573 (2006).

[97] Ron Reagan, Jr., Speech to the Democratic National Convention (July 27, 2004) (transcript available at http://www.nytimes.com/2004/07/27/politics/campaign/27TEXT-REAGAN.html).

[98] *See* Roger Highfield, *Embryo-Free Stem Cell Research Gets Boost*, TELEGRAPH.CO.UK, June 4, 2008, http://www.telegraph.co.uk/science/science-news/3343533/Embryo-free-stem-cell-research-gets-boost.html (on file with the Harvard Law School Library).

fabricated his data.[99] Since 2007, after the discovery of methods to "reprogram" ordinary body cells into fully potent stem cell lines, the case for cloning as the path to disease-specific and patient-specific cell lines has further eroded. Many scientists, including Ian Wilmut, famous for his role in cloning Dolly the sheep in 1996, have abandoned the work.[100]

Even before the Hwang scandal and the emergence of cell reprogramming, paying women to provide eggs for stem cell research was opposed in some mainstream scientific circles. A number of prestigious scientific bodies, including the National Academy of Sciences and the California Institute for Regenerative Medicine, ruled that women could be reimbursed for expenses they incur in the course of egg-harvesting procedures, but not beyond that.[101] A number of industrialized countries have also prohibited payments beyond expenses.[102] Nonetheless, in 2009, the state-funded stem cell program in New York decided to break with this near-consensus. A liberal bioethicist on the agency's ethics board argued for payments by saying, "I think that we are an ethics committee, and I actually think that, if good science demands these oocytes, that we have the obligation to provide them . . . ."[103] The sad lesson of this incident is that some liberals are allowing themselves to rubber-stamp even dubious proposals from the scientific enterprise they are charged with monitoring.

Toward Progressive Biopolitics

We have come to expect technical innovations outside the life sciences—for example, nuclear energy, large hydroelectric dams, and synthetic pesticides—to elicit wide and sometimes vociferous debate. T hese controversies involve questions about safety, efficacy, appropriate regulation, and alternative approaches. They often extend to issues of social justice—considerations about who will enjoy the envisioned benefits and who will bear the often hidden burdens and risks. We assume that environmental, consumer, and human rights groups will weigh in on such matters, and we treat public awareness of the social and technical complexities of these matters as

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[99] Gina Kolata, *A Cloning Scandal Rocks a Pillar of Science Publishing*, N.Y. Times, Dec. 18, 2005, at A28.

[100] Roger Highfield, *Dolly Creator Prof Ian Wilmut Shuns Cloning*, Telegraph.co.uk, Nov. 16, 2007, http://www.telegraph.co.uk/science/science-news/3314696/Dolly-creator-Prof-Ian-Wilmut-shuns-cloning.html (on file with the Harvard Law School Libarary); Sally Lehrman, *No More Cloning Around*, Sci. American, July 31, 2008, at 100.

[101] Nat'l Acads., *supra* note 36, at 85–87; Cal. Inst. of Reprod. Med., Guidance for CIRM Medical and Ethical Standards Regulations Governing Donation of Oocytes for CIRM-Funded Research 2 (2008), *available at* http://www.cirm.ca.gov/workgroups/pdf/Guidance_Donation_Oocytes.pdf; *see also* Deborah Spar, *The Egg Trade—Making Sense of the Market for Human Oocytes*, 356 New Engl. J. Med. 1289, 1290 (2007).

[102] These include South Korea, Singapore, China, Israel, Japan, Canada, and Australia. *See* BioPolicyWiki, http://www.biopolicywiki.org (follow "Country" hyperlink, then follow these countries' hyperlinks) (on file with the Harvard Law School Library).

[103] Posting of Jesse Reynolds to Biopolitical Times, http://www.biopoliticaltimes.org/article.php?id=4684 (May 19, 2009) (on file with the Harvard Law School Library).

a sign of healthy democracy. We need similarly robust debate about human biotechnologies, and far more inclusive participation in decisions about how they will be developed.

Human biotechnologies pose an additional challenge because of the moral dilemmas they raise. In the "culture wars" that have divided the American polity, these moral matters are too often reduced to a single concern—the status of human embryos. Liberals and progressives need to reject this limiting definition and cultivate broader and richer understandings about the meaning and morality of human biotechnologies.

In doing so, we can draw on a number of moral traditions: on progressive and liberal commitments to social justice and market regulation; on the environmentalist case for precaution in the face of powerful technologies that manipulate the material world; and on the important strands of moral philosophy and religious thought that counsel preferential treatment of the poor and forethought about future generations. Building on these rich legacies, we can craft a biopolitical imagination that is adequate to meet the unprecedented challenges we face, and we can develop a policy agenda that will ensure a healthy, just, and progressive human future.