The deeply divided panel last week recommended a moratorium on all human cloning, yet a majority of the members had expressed support in principle for cloning for biomedical research

President's Bioethics Council Delivers

On 11 July, following months of deliberations, the President's Council on Bioethics delivered its long-awaited recommendations to President George W. Bush regarding federal policy on human cloning. The deeply divided panel's conclusions—that the government should ban cloning for reproductive purposes and observe a 4-year moratorium on cloning for biomedical research—sparked immediate controversy, not only about the decision but how the council reached it. The 194-page report said that the panel favored the moratorium by a 10–7 margin.

Chair with a view. Leon R. Kass came in strongly favoring a ban on all forms of cloning, but he proved to be a fair chairperson.

Political camps on both sides of the issue immediately sought to capitalize on the panel's recommendations. *The New York Times* quoted a senior Bush Administration official as saying the report was "consistent with the president's core view, which is that all human cloning is wrong and should not be authorized." The council's chair, Leon R. Kass of the University of Chicago, penned an op-ed column for *The Wall Street Journal* that appeared the morning of 11 July, and the U.S. Conference of Catholic Bishops immediately issued a statement praising the result and saying that "without further delay, the U.S. Senate should join President Bush, the House of Representatives, and the President's Council on Bioethics in supporting *at least* a temporary ban on all human cloning." Groups that support research cloning—transplanting the nucleus from an adult human cell into an egg cell to produce an early-stage embryo that might provide clues to the genetic development of many diseases or a source of embryonic stem cells for therapies—expressed disappointment at the moratorium recommendation. But they took some solace from the fact that a majority rejected a complete ban.

In fact, support on the panel for research cloning was broader than the vote suggests. A majority of council members have expressed support in principle for research cloning, and the moratorium option became the majority position only after two panel members changed their publicly stated positions after the council's June meeting. "The fact on the ground is that the majority of the council has no problem with the ethics of biomedical cloning," says council member Michael S. Gazzaniga, a neuroscientist at Dartmouth College in Hanover, New Hampshire, who complained that the shift in the council's majority decision was unknown to many members until the draft of the final report was circulated. Some members also complain that the moratorium option was not adequately discussed. It "got thrown in at the last minute," says Elizabeth H. Blackburn, a respected molecular biologist at the University of California (UC), San Francisco.

Like a divided Supreme Court, the panel broke down into two distinct blocs, with a swing-vote group in the middle, but as the deliberations progressed, support for research cloning gained among that crucial middle bloc. Along the way, the Kass council arguably achieved the most wide-ranging, in-depth, and thoughtful public discussion of the cloning issue in the United States (for the report and transcripts, see www.bioethics.gov). "There is no shame in disagreement about hard ethical questions like cloning for biomedical research," said Michael J. Sandel, a professor of government at Harvard University. "The president could have stacked the council to guarantee agreement. He should get credit for appointing a group that has wrestled honestly with the issue."

But all that high-minded wrestling ended up in a last-minute, nonpublic vote count that has left some members fuming. "We always feared," said Blackburn, "that the dirty work would happen at the crossroads."

No "council of clones"

When its membership and staff were announced last January, the council was immediately attacked as being top-loaded with ethical conservatives. Arthur Caplan, a University of Pennsylvania bioethicist, referred to it as "a council of clones," politically speaking, and predicted that the panel "will do nothing to jostle any of the president's already espoused positions condemning stem cell research, cloning, and the creation of human embryos for research."

Among its members are several conservative intellectuals and bioethicists who regard the embryo as having a special moral status that precludes its use in experimentation. The three working scientists and two working physicians on the panel leaned toward support for research cloning.

Kass, however, was perhaps the most outspoken opponent of cloning. Trained as a physician, he received a Ph.D. in biochemistry from Harvard in 1967. But Kass increasingly became interested in the ethical issues raised by modern biomedical research. An elegant essayist and widely admired teacher, he consistently questioned developments in what he called the "new biology." He not only opposed new technologies such as in vitro fertilization, but he has written that "... science essentially endangers society by endangering the supremacy

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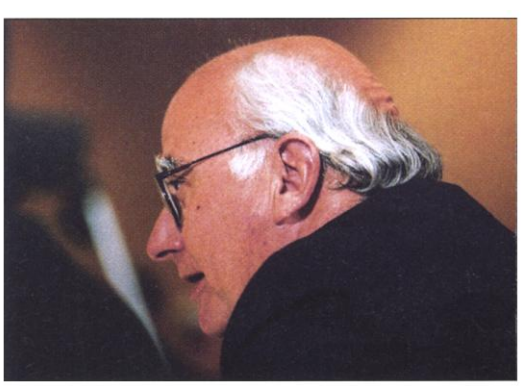


View from the bench. Michael Gazzaniga provided outspoken support for research cloning.

of its ruling beliefs." In a long essay in *The New Republic* in 2001, Kass argued for a complete ban on cloning and wrote, "Now may be as good a chance as we will ever have to get our hands on the wheel of the runaway train now headed for a post-human world and to steer it toward a more dignified human future."

Despite all that, a funny thing happened to this "stacked" council on its way to a supposedly foregone conclusion. The intellectual arguments were spirited and profound and, in public at least, the stridency of Kass's written views did not influence his public stewardship of the conversation. He proved to be a nimble and fair-minded moderator, giving all points of view their due and egging on all participants to better articulate and defend their position. From the beginning, he acknowledged that the council was unlikely to reach a consensus but insisted that the group produce a document that, as he put it, "everyone can own."

One point of agreement

By its second meeting, in February, the panel had easily reached unanimous agreement to recommend a ban on reproductive cloning. But that was the first and last instance of unanimity. At that same meeting, the battle lines over biomedical cloning were sharply drawn between the scientists on the panel and those who viewed the embryo as inviolable. Paul McHugh, chief of psychiatry at Johns Hopkins University in Baltimore, aptly summarized the dilemma as a conflict "between my sympathies and my pieties. ... Sympathy for the sick and the necessity for more information and treatment for the sick. And piety for human life, its giftedness, thankfulness for it, and its manifest joys."

Perhaps the most revealing exchange began with a moving personal reminiscence by Kass, who described what it was like, as a young teacher of biology, to peer into a microscope and witness the miracle of development. "It was a sea urchin egg," he told the group, his voice full of wonder. "And while I am watching, this one cell becomes two cells. And I have to say it was one of the most powerful experiences of my life. ... I knew that I was in the presence of something. There was a power at work here that was really just astonishing."

A few minutes later, Gazzaniga punctured Kass's reverie. "We all remember that moment," he said. "It is not so exhilarating when it is a tumor cell. In fact, you grow to hate it, and you are sitting there trying to figure out 'How can I stop this thing from killing somebody?' and so that is what we are talking about here."

Kass's jaw visibly tightened as Gazzaniga spoke, and a few more jaws dropped when the neuroscientist went on to challenge the argument that an early embryo, cloned or otherwise, deserves special respect because of its potential to become a human being. Gazzaniga likened the cells of an early embryo to building supplies at a Home Depot store. "There are the elements for 30 homes, and they have the potential of 30 homes in that Home Depot. The Home Depot burns down. The headline is not 'Community Burns Down Houses.' It's 'A Home Depot Burns Down.' That is the stage those goods are at. ... I am talking to the people here who have not made up their mind. Are you concerned about it as a clump of 200 cells or not? And a lot of people are not."

HOW THE PANEL SPLIT ON RESEARCH CLONING

Panel member	Discipline
Voted for moratorium:	
Rebecca S. Dresser	Law
Francis Fukuyama	Political science
Robert P. George	Law
Mary Ann Glendon	Law
Alfonso Gomez-Lobo	Philosophy
William B. Hurlbut	Bioethics
Leon R. Kass	Bioethics
Charles Krauthammer	Journalism
Paul McHugh	Psychiatry
Gilbert C. Meilaender Jr.	Ethics
Voted for research with regulation:	
Elizabeth H. Blackburn	Molecular biology
Michael S. Gazzaniga	Neuroscience
Daniel W. Foster	Internal medicine
William F. May	Medical ethics
Janet D. Rowley	Cell biology
Michael J. Sandel	Government
James Q. Wilson	Political science

The February meeting made clear that there were two core groups on opposite sides of the issue of biomedical cloning. Among those who expressed support for allowing it were Gazzaniga, Blackburn, McHugh, Janet D. Rowley of the University of Chicago, and Daniel W. Foster of the University of Texas Southwestern Medical Center in Dallas. Among those who opposed the creation of cloned embryos were Robert P. George of Princeton University, Alfonso Gomez-Lobo of Georgetown University, Gilbert C. Meilaender Jr. of Valparaiso University in Indiana, Mary Ann Glendon of Harvard University, and the writer Charles Krauthammer; Kass's writings unequivocally made him an opponent of all forms of cloning. There was a kind of nonscientific, nontheological swing vote in the middle, including Sandel, William B. Hurlbut of Stanford University, Rebecca S. Dresser of Washington University in St. Louis, Francis Fukuyama of Johns Hopkins University, William F. May of Southern Methodist University in Dallas, and James Q. Wilson of UC Los Angeles.

Shifting ground

The council's next meeting, scheduled for March, was canceled, but the political ground within the council shifted dramatically at the April meeting. Kass might have had an inkling by this point that the group was drifting away from both his and President Bush's position; according to one council member, the chairperson said he did not want to take a straw poll on where the council stood on research cloning because he "didn't want to embarrass the president." Clearly, politics had become part of the council's calculus.

For a crucial discussion on 25 April, Kass outlined four somewhat idiosyncratic positions. Proponents of position 1, he explained, would allow research cloning, with no moral regrets or concerns; position 2 would allow it, but "with humility"; position 3 would forbid it, but "with regret"; and position 4 would forbid it with no regrets.

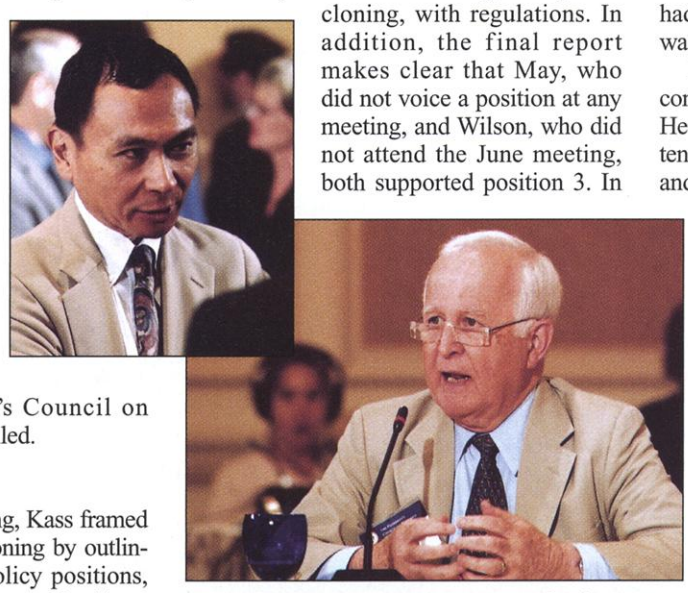
The initial conversation followed predictable lines. Gazzaniga, Blackburn, Rowley, Foster, and McHugh favored either positions 1 or 2. McHugh, describing himself as "between 1 and 2," reiterated an argument suggesting that a cloned human embryo—what he called a "clonote"—was "essentially, integrally, indeed vitally different" from a zygote and thus should be regarded more as a form of tissue culture.

Among those expressing views against biomedical cloning were Meilaender, Gomez-Lobo, and Krauthammer. Krauthammer said he was convinced that allowing cloning for research would be the first step on a slippery slope that would inevitably result in cloned children, and therefore for "prudential" reasons, all forms should be banned. Those remarks set up the most dramatic exchange of the meeting.

The next member to speak was Wilson, the well-known neoconservative writer. "I've listened for years to [Krauthammer] and read [Krauthammer] for years without, I think, disagreeing with a single word he's uttered," Wilson said, "until today." Wilson went on to challenge the slippery slope argument, situating it in a historical pattern of social fear of new technologies ranging from the automobile to organ transplantation. "That's an argument that can be used against every advance in medical science that I can think of," Wilson said. "I want us to back away from this particular prudential argument, because I don't think it's correct. ..." Wilson's comments shook the room like a political earthquake. In rejecting the slippery slope argument, he appeared to line up in favor of research cloning (as he indeed ultimately did).

Proponents of research cloning immediately sensed that the political balance within the council had shifted. With Wilson apparently on board, there were at least six members in favor of research cloning, and Sandel, an influential and articulate member of the swing group, confirmed to *Science* after the meeting that he too had adopted position number 2. Determining a majority on the 18-member council was complicated by the fact that one member, Yale Law School professor Stephen L. Carter, did not attend most of the meetings. With Carter not participating, nine votes constituted a majority, and the proponents of research cloning left the April meeting believing they were close to having a majority.

"I would have liked us to be on record," one member privately told *Science* after the meeting, "because I think it would be important for the Senate to get a sense of where we are moving." Exactly the opposite happened. As the U.S. Senate seemed headed for a debate on human cloning in the ensuing weeks, the May meeting of the President's Council on Bioethics was abruptly cancelled.



Change of mind? Francis Fukuyama (*left*) and Paul McHugh voiced support for research cloning but backed a moratorium in the final report.

A slim majority emerges

At its decisive 20 June meeting, Kass framed the discussion of research cloning by outlining seven possible public policy positions, ranging from allowing it to proceed without regulations (position number 1) to a moratorium on all forms of human cloning (position number 7) to a ban on all forms of cloning (position number 5). If the order of the positions seems confusing, so too was the meaning of several key policy options.

The two critical options, as the conversation evolved, were positions 3 and 6. Position 3 would allow research cloning to proceed with regulation, once a regulatory oversight mechanism was in place; position 6 would impose a moratorium. (Both would ban reproductive cloning.) But it became clear that the moratorium meant different things to different members. Some understood it as a temporary pause to allow regulations to be established; others saw it as an opportunity for continued public discussions; still others saw it as a temporary ban that would allow them to continue their campaign for a permanent ban. At no point was the length of the proposed moratorium publicly discussed. "I have no idea where the number came from," said Blackburn.

In what appeared to be a strategic abandonment of principle, members of the council who had previously supported a total ban suddenly favored a moratorium on research cloning. Several members immediately challenged the propriety of this switch. Sandel pointed out that anyone who believed an embryo had equal moral status with a human being basically believed in a ban, not a moratorium. "To accept a moratorium rather than a ban presupposes that maybe sometime down the road this would be morally permissible, and otherwise, the principled position is a ban. … The moratorium doesn't capture that position."

Despite the large bloc now supporting the moratorium option, seven members at the June meeting publicly expressed support for position 3: allowing therapeutic cloning, with regulations. In addition, the final report makes clear that May, who did not voice a position at any meeting, and Wilson, who did not attend the June meeting, both supported position 3. In other words, there were nine votes on the council supporting biomedical cloning with some sort of regulation, and *without* need of a moratorium.

Of particular note, Fukuyama said at the June meeting, "I actually am sort of persuaded that [position] 3 interpreted as a de facto moratorium may actually be preferable. …" He said he believed that "the appropriate solution is to permit it [research cloning] under a strict set of guidelines that would involve no research past … 14 days." McHugh concluded that "given the fact that time is of the essence, that there are very important things both at stake in the moral issues, but also at stake in the clinical issues, I'm moving towards [position] 3 and feel that it would accomplish all the things that I had wanted to accomplish when I came."

Blackburn, Gazzaniga, Rowley, and other council members left the June session convinced that a narrow majority supported research cloning—a stunning outcome certain to shock both the Bush Administration and Capitol Hill.

Last-minute reversal

The proponents of research cloning had barely a week to savor their triumph. On Friday, 28 June, panel members began to receive draft language of the policy recommendations, and many were shocked to read the recommendation on research cloning. The draft report said that, by a 10–6 majority (Wilson was still not reachable and Carter "not participating"), the council recommended a 4-year moratorium on research cloning. McHugh and Fukuyama had changed positions since the meeting. For many council members, it was the first indication that the majority position had changed. Rowley, for example, said she was "really caught by surprise."

McHugh said in an interview that several considerations informed his change of mind. He said he felt there needed to be more extensive public discussion of research cloning and more animal research to offer proof of the potential benefits. Fukuyama told *Science* that he didn't regard his position as changed, saying that "on reflection" he thought more discussion would be useful. Both he and McHugh made clear, however, that they personally have no ethical problems with cloning for biomedical research, as long as regulations are in place.

Some panelists were clearly upset by this turn of events. "If I had known that two or three members of the council were to change their stated views between the June meeting and the final report, I would have insisted that the proposition for a total ban on cloning be distinguished from the current proposal," said Gazzaniga. "That would have made the final vote reflect the true intent of the council."

Kass insisted that there was nothing manufactured about the panel's majority. "It is certainly a compromise," he said, "but it's a principled compromise." At the 11 July meeting, Kass defended the 4-year length of the moratorium, explaining that it was "less than some wanted and more than others wanted." "We never had that discussion [about duration]," complained one member. "That is a tracer about how much was going on behind the scenes. That is prima facie evidence of some backroom stuff."

Blackburn, who did not attend the July meeting in part as a "tacit" protest, said the council's recommendations were "bound to be politicized, because of the nature and timing of the issue." In the end, the council's last-minute majority might have spared the president considerable embarrassment, but at a price: the possible loss of long-term credibility.

–STEPHEN S. HALL

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