Stem Cell Research

the bigger picture

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In 1998, a team led by Wisconsin researcher James Thomson created the first line of human embryonic stem cells. Since then, stem cells have rarely left the headlines. Not since Asilomar and the genetic engineering controversy has a basic science topic generated so much press and political discussion. Why? What accounts for the preoccupation and the passion?

Part of the explanation lies in the compelling moral claims made on both sides of the debate. Also at work is an unprecedented level of advocacy, not just from the usual suspects—researchers, scientific organizations, and pro-life groups—but from patients, families, and celebrities, too.

Research using human embryonic stem cells raises an array of complex ethical issues, including, but by no means limited to, the moral status of developing human life. Unfortunately, much of the public discussion fails to take into account this complexity. Advocacy for liberal and conservative positions on human embryonic stem cell research can be simplistic and misleading. This research will always be controversial, but a richer public debate could clarify the issues and point to more thoughtful policy approaches to the stem cell question.

The President's Council on Bioethics has issued two reports on stem cell research. The first, *Human Cloning and Human Dignity* (President's Council 2002), discusses the creation of cloned embryos as sources of stem cells. The second, *Monitoring Stem Cell Research* (President's Council 2004), covers research using stem cells from a variety of sources, including human embryos. Both reports set

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Perspectives in Biology and Medicine, volume 48, number 2 (spring 2005):181–94

forth the reasoning that underlies different positions on scientific uses of human embryonic stem cells. In this essay, I draw on material from both Council reports, as well as on my own views, to analyze ethical and policy issues raised by this research. I focus on different possibilities for implementing an approach incorporating the position that human embryos have an intermediate moral status. I also call attention to important but neglected considerations that should be part of the debate over federal support for human embryonic stem cell research.

MORAL STATUS AND DEVELOPING HUMAN LIFE

Stem cells themselves are not human embryos, but they must be derived from embryos. To derive stem cells, scientists must destroy a human embryo. Is this morally permissible? Each individual's position on this issue is affected by that individual's view of the early embryo's moral status.

Some people believe that embryos have the moral status of persons, based on the view that conception is the point that a person begins. In a statement accompanying *Human Cloning and Human Dignity*, Robert George presented this view: "The embryonic, fetal, infant, child, and adolescent stages are stages in the development of a determinate and enduring entity—a human being—who comes into existence as a single cell organism and develops, if all goes well, into adulthood many years later" (George 2002, p. 294).

For people who share this belief, possible knowledge gains cannot justify stem cell or any other research that requires embryo destruction. This belief underlies President Bush's decision to limit federal funding for human embryonic stem cell research. According to the decision, the National Institutes of Health (NIH) may support only projects using stem cells from lines developed before August 2001, when the President made his announcement. This time limit for NIH funding was imposed to keep government research support from becoming an incentive for further embryo destruction (Bush 2001).

Of course, many people disagree with the position that human embryos have the same moral status as children and adults. People who see the embryo as something less than a full person note that early embryos lack many characteristics that make persons morally significant, such as the ability to think and feel pain and pleasure. In early embryos, the beginning of nervous system, the primitive streak, hasn't yet formed. At the point that stem cells are derived, which is about five days after conception, embryos are not even clear individuals—twinning can occur after that point (President's Council 2004, pp. 78–81).

The location of the embryos also matters to some people. For example, Jewish law has been interpreted to hold that the embryo has no status outside a woman's body (Dorff 2001). Similarly, abortion opponent Senator Orrin Hatch supports embryonic stem cell research because "human life requires and begins in a mother's nurturing womb" (Hatch 2002). According to this view, the human embryo's ability to develop depends on being in the right environment. When

embryos are created in the laboratory, through either in vitro fertilization (IVF) or cloning, they cannot move beyond the embryonic stage unless a human actor transfers them to a woman's uterus. For people holding this view, embryos fertilized in the laboratory lack their ordinary developmental capacity and, as a result, lack the moral status of embryos fertilized in the usual way.

The embryos' location separates the stem cell controversy from the abortion debate, too. Rather than a clash between preserving early human life and protecting a woman's control over her body, stem cell research pits embryonic life against the social value of advancing knowledge. Although people in the United States are enthusiastic about promoting scientific research, this activity has not received the same constitutional and common law protection as have the individual bodily integrity interests at stake in decisions about pregnancy (Berkowitz 2004).

Whatever the ethical justification for their position, people who fail to see embryos as morally equivalent to persons usually adopt a developmental approach to moral status, in which prenatal life gains increased moral status over time. In his cloning report statement, Bioethics Council member James Q. Wilson articulated this view: "A fertilized [egg] cell has some moral worth, but much less than that of an implanted [egg] cell, and that has less than that of a fetus, and that less than that of a viable fetus" (Wilson 2002, p. 348).

Those taking a position like Wilson's must answer a further question, however. If early embryos aren't persons, are they just objects or property? Can *anything* be done with them? Some people do take this position. For example, Bioethics Council member Michael Gazzaniga has said that the early human embryo is just a clump of cells, cells that may be handled in the same way as any other human tissue used in research (Gazzaniga 2002).

But many people rejecting the embryos as persons view reject Gazzaniga's position, too. People in this group think that embryos should be treated with "special respect" because they have the potential to become persons. Several advisory groups considering the ethics of embryo research have endorsed this view, as has at least one court resolving a divorcing couple's dispute over how to dispose of frozen embryos (Davis v. Davis 1992; DHEW Ethics Advisory Board 1979; NBAC 1999; NIH 1994).

Simply saying that embryos should be treated with special respect fails to resolve the stem cell research question, however. Anyone holding this view must decide what special respect means in the research context. Is it possible to show special respect to an organism while at the same time allowing it to be used in destructive research to advance the interests of others?

EXAMINING SPECIAL RESPECT

A few policy proposals seek to put the special respect position into practice. A relatively popular idea is to allow embryos remaining after infertility treatment

to be used in research, but to forbid creating embryos purely for research. People holding this view think that using unwanted IVF embryos to advance medical knowledge is more ethical than discarding them or storing them indefinitely (Annas, Caplan, and Elias 1999). Research embryos are expected to come from fertility patients who don't want to donate them for reproduction (a practice known as embryo adoption), because they don't want someone else raising their genetic children. If these individuals can't donate for research, their embryos will be destroyed or left in storage, where they could eventually lose viability.

Many people think that it would be better to permit embryos that would otherwise be discarded to be used in research that might help future patients. At the same time, some of these people also see significant moral differences between studying donated IVF embryos and producing embryos purely for research purposes. They object to the latter activity because it treats embryos as products to be manufactured for utilitarian reasons (Krauthammer 2002).

Yet this position has its challengers, too. One of them is Council member Michael Sandel, who questions the distinction between studies that use stem cells from embryos remaining after IVF treatment and studies that use stem cells from embryos created purely for research. As he points out, in both cases embryos are created for worthwhile activities—helping infertile couples have children and generating knowledge that might help future patients.

What is different, though, is intent. In one situation, scientists purposely create embryos to be destroyed so that stem cells may be obtained. In the other situation, embryos are created with the hope that they will develop into children, a goal more consistent with respecting embryos as potential persons. When embryos are created in the clinic, prospective parents and the medical professionals assisting them do not know whether all of the embryos will be needed for infertility treatment. And they do not know whether the couple will eventually choose to donate or destroy any embryos that might remain once the treatment effort is finished.

Sandel argues that the difference in intent is insufficient to create a legitimate moral difference between the two practices. If creating embryos for research "is exploitative and fails to accord embryos the respect they are due," he declares, then so are fertility clinic practices that create excess embryos that are likely to be destroyed (through research or discard). Moral consistency requires either allowing embryos to be created for research or changing IVF clinic practices so that no excess embryos are created (Sandel 2002).

Moral and legal analysts often distinguish acts performed with the explicit aim of producing a problematic result and those done with awareness of a risk that the problematic result will materialize, and one could argue that such a distinction should be drawn here (FitzPatrick 2003). Also, as Yale Professor Gene Outka observed in a presentation to the Bioethics Council, even if IVF practice changed so that no more excess embryos were created, we would still need to address the

permissible disposition of embryos now stored in clinic freezers (Outka 2002a, 2002b). According to clinicians, many of those embryos would not be suitable for implantation, because they are abnormal in ways that would hamper healthy fetal development. As a result, such embryos ought not be adopted for reproduction. Are they thus permissible sources of stem cells for research?

At the same time, Sandel's arguments, as well as scientific claims that certain studies can be done only with specially created research embryos, make it imperative to evaluate the morality of creating embryos purely for research. In the stem cell context, the debate centers on whether it would be permissible to create an embryo by cloning a living person's cell for biomedical research purposes. This procedure, often called "therapeutic cloning," is promoted as a means to avoid immune system rejection of transplanted stem cells in patients who need replacement tissue. In theory, researchers could create an early embryo by combining the nucleus of a patient's somatic cell with an enucleated human egg cell. After allowing the embryo to develop for a few days, they would attempt to harvest the resulting embryonic stem cells and establish a cell line for transplantation into the patient (President's Council 2002, pp. 74–78).

Such cloned embryos could also be valuable in basic research investigating the origins of various diseases. As the Council's cloning report notes, "creation of cloned embryos using nuclei from individuals carrying genetic mutations—specifically, genes that predispose them to particular diseases—might be used to better understand and treat those diseases" (President's Council 2002, p. 146).

Research cloning critics argue that deliberate creation of potential human life purely to serve as a research tool treats human embryos too much like objects. Besides undermining the special respect position, they say, it could lessen respect for other forms of human life. In the words of one such critic, Bioethics Council member Charles Krauthammer: "The very act of creating embryos for the sole purpose of exploiting and then destroying them will ultimately predispose us to a ruthless utilitarianism about human life itself" (Krauthammer 2002, p. 325).

A related set of objections focuses on risks to women providing the eggs necessary to create research embryos. Women supplying eggs must take high doses of hormones and undergo numerous tests and procedures. The process is known to carry a small risk of serious injury and, rarely, death (Kaiser 2003). Some experts also worry that it might contribute to health and fertility problems later in life (ASRM 2000). A further problem is that the process seems to enlist women in the manufacturing of research tools—to regard their bodies as a means of production. And to obtain an adequate supply of eggs, researchers would probably have to pay women, which again makes it look as though embryos are being manufactured as if they were objects or property. There is concern as well about the quality of decisions to donate eggs for research. Monetary incentives to provide eggs raise concerns about undue inducement, especially among students and low-income women.

Of course, several of the same problems apply when women supply eggs to help infertile people have children, and some embryo research critics oppose this practice, too. Others say that providing eggs for infertility treatment is more respectful of women and embryos, because the aim is to create children who will be loved and valued as persons, rather than to produce a useful item for research. Moreover, because a limited number of women are willing to undergo the demanding hormone regimen and egg retrieval procedure, there is a shortage of eggs available for infertility treatment. In some areas of the country, clinics engage in "bidding wars," offering higher payments to attract women to their programs (Sauer 1999). Increased demand for eggs in research could exacerbate the competition for donors, intensifying worries about commodification and undue inducement. These worries have led some women's health advocates to call for a moratorium on research cloning, at least until there is more animal research demonstrating the distinct value of stem cells from cloned embryos (Norsigian 2002).

Toward a Research Policy Based on Special Respect

I see the disagreement on these matters as part of a struggle to work out what special respect for early human life should mean in the research context. Given that this is a relatively new ethical, social, and policy question, it is not surprising that we lack consensus at this point.

The inquiry is also part of a broader moral examination, one that concerns research conducted with what might be called "moral intermediates." This is research that involves the destructive study of organisms generally viewed as having appreciable moral significance, but not the moral worth of a fully developed human being. Such intermediates include human embryos and fetuses, as well as nonhuman mammals and perhaps some other species. There is heated debate over the general moral responsibilities we have toward these organisms, and over the circumstances in which it is morally permissible to use them to produce scientific knowledge. These questions are among the primary moral challenges we face today. The controversy over the appropriate conduct of human embryonic stem cell research occurs in this broader moral context.

As we have seen, some who support the special respect view argue that we should prohibit the creation of embryos purely for research. There are additional ideas for putting the special respect position into policy, though they have received less attention in the public debate over stem cell research. In an essay called "The Elusive Nature of Respect," theologian Karen Lebacqz (2001) explored the moral basis for one such policy approach. Lebacqz applied the concept of respect to persons, to sentient beings, and to the natural world. Then she considered what respect might mean in the context of human embryonic stem cell research. According to Lebacqz, it is possible to treat embryos with "awe or reverence," to regard them as having "incredible value; as something precious

that cannot be replaced with any other [embryo], whose existence is to be celebrated and whose loss is to be grieved," and at the same time, to allow them to be used and killed in limited circumstances, when necessity is established. As an analogy, she cited traditional Native American attitudes toward killing animals for food.

Lebacqz's reflections suggest that at the very least, decisions about stem cell research should incorporate a careful analysis of the justification for embryo use. Two tasks are essential to this analysis. One is to assess the value of a proposed study's objectives, which requires us to rank the good of various research ends. Embryonic stem cell research could advance a variety of human interests, such as improved health, extension of the average life span, economic interests, career advancement, and satisfaction of scientific curiosity. Which of these interests, if any, is important enough to warrant creation and destruction of human embryos and the other potential harms, such as injury to women providing eggs, that could accompany the research?

Besides evaluating the importance of a proposed project's goal, we must also consider how essential embryo use is to attaining that goal. Thus, the second dimension of the justification assessment involves probability and prediction: what is the likelihood that a proposed embryo study will advance important human interests? To what extent could the human interests at stake be satisfied by an alternative approach?

Certain substantive limits on human embryonic stem cell research could be justified under this approach. For example, some scientists think that it will not be necessary to use stem cells from cloned embryos to avoid the immune rejection problem. Alternatives, such as a bank of stem cells with a range of genetic characteristics, might avoid the need to create cloned embryos purely for research (Faden et al. 2003). Alternatives may also prove more feasible and cost-effective, for the evolving view seems to be that cloning an embryo for each patient would be too expensive and complicated to constitute a practical therapeutic alternative (Pollack 2001; Vogel 2002). So-called adult stem cells, which are present in the tissues of adults and children, may be adequate alternatives to embryonic stem cells in certain types of research; stem cells from donated umbilical cords and fetal cadavers could also be adequate for some scientific investigations (President's Council 2004).

Determining whether there is adequate scientific and moral justification for embryo creation and destruction will inevitably be an imperfect process. Nevertheless, some level of advance screening is reasonably attainable and, under the special respect view, ethically warranted. The review process for making research funding decisions provides a partial model for decisions on the justification for human embryo use. In the funding context, scarce monetary resources are awarded on the basis of predictions about the potential contributions that could come from competing projects. Reviewers make judgments about the likelihood of success and the value of project objectives, despite the unavoidable flaws char-

acterizing this process. Similarly, human embryos may be viewed as organisms of extraordinary moral value, to be reserved for the most promising and worthwhile projects that could contribute to benefits unavailable through other means.

The integrity of such a review process will also depend on the quality and commitment of those conducting the review. Study proposals should be considered by a review group that is more diverse than the scientific panels that make research funding decisions. The difficult moral judgments central to the evaluation should be made by individuals with wide-ranging expertise, including philosophers, theologians, and other nonscientists. Reviewers should also have different views on the moral issues raised by creating and destroying human embryos for research. In short, the review process should not be designed to promote easy consensus. Instead, it should be designed to generate the lively and serious exchanges one would expect from a policy incorporating the special respect position on scientific uses of early human life.

Policy decisions on stem cell research should also take into account the line-drawing issues. Three years ago, researchers at a biotech company reported that they had created tissue that formed functioning kidney-like organs in cows. To achieve this, they first cloned an embryo from one cow's cell and implanted that embryo into another cow's uterus. They let the embryo develop to the early fetal stage, removed it and harvested the tissue, then implanted that tissue into the first cow (Lanza et al. 2002). In this instance, producing tissue for cell therapy involved not only the creation of a cloned embryo, but also the gestation and destruction of a cloned fetus.

Would the prospect of benefits to patients lead us to permit this in humans? At what point would we say that no benefit to others could justify the instrumental creation and destruction of developing human life? Because there is likely to be pressure to allow destructive research on developing humans past the point at which stem cells can be retrieved, we need to establish a strong moral and policy basis for drawing the line at a particular point, a line that will prevent a slide down the slippery slope and enable us to stand firm against the allure of achievements that could come from permitting research that destroys human life at later stages of development.

PROBLEMS WITH THE PUBLIC DEBATE

Responses to the line-drawing issue are one problem with the public debate over stem cell research. Many debate participants, as well as journalists reporting on the debate, have failed to promote informed public discussion. Some research cloning opponents have exaggerated the slippery-slope threats. For example, President Bush has said that a government willingness to allow cloning for biomedical research would inevitably lead to "human beings . . . grown for spare body parts" (Goldstein 2002). On the other hand, research supporters downplay the slippery-slope challenges. Some of them would accept a rule prohibiting embryo destruc-

tion after 14 days of development, but others would permit destruction later than that point. For example, a majority of the NIH Human Embryo Research Panel (1994) favored extending the limit to 21 days, citing the valuable knowledge that might be gained from such research. In a world where vulnerable humans have often been seen as resources for experimentation to benefit the powerful, it would be dangerous to dismiss the line-drawing challenges implicit in policy making about research that destroys developing human life.

A second problem with the public debate is exaggeration about potential cures and therapies from stem cell research. This research is at an early stage, but certain members of Congress, patient advocates, scientists, and scholars paint quite a different picture. According to these individuals, anything less than wholehearted support for embryonic stem cell research is equivalent to denying effective treatment to patients with Parkinson's, Alzheimer's, diabetes, and other devastating illnesses (Holden 2004; Malakoff 2002).

This charge conflates the goal of biomedical research, which is to advance knowledge, with the goals of established medical care, which are to heal and prevent disease (Fletcher 2001). Embryonic stem cells are a new tool for basic research, not a sure cure for serious illness. Research proponents portray stem cells as a source of miracle treatments in order to attract support that would be less forthcoming if they acknowledged the potential barriers to devising effective therapies. A graphic example of this strategy comes from Senator Ted Kennedy, who reportedly declared that research cloning will allow officials "to empty three-quarters of the nursing home beds in Massachusetts" (Holden 2002).

Use of certain terms also represents an effort to conflate research and therapy. Research supporters use the term "therapeutic cloning" to refer to creation of cloned embryos for research. Indeed, one strong supporter, Council member Mike Gazzaniga, prefers the term "lifesaving cloning" (Gazzaniga 2002). And the blending of early-stage research with proven beneficial therapy occurs on both sides of the stem cell debate. Opponents of human embryonic stem cell research exaggerate the promise of adult stem cell research, while embryo research supporters do the same for human embryonic stem cell studies.

Portraying any kind of stem cell research as therapeutic is highly misleading. A few scientists openly admit that the prospects for stem cell therapies have been inflated. For example, James Thomson, the scientist whose team first isolated human embryonic stem cells, has said, "we've raised a lot of false hope for quick fixes and that's not going to happen" (Holden and Vogel 2002). When pressed to assess the state of the science, reputable scientists recognize that many obstacles could thwart efforts to develop effective therapies. Researchers must devise ways to coax stem cells to turn into properly functioning tissues. They must learn how to prevent the cells from causing cancer. There is also the problem of immune rejection mentioned earlier. In November 2003, a group of distinguished experts in science, law, and philosophy described the numerous safety questions that must be investigated in animal studies before stem cell–based interventions are

tried in humans (Dawson et al. 2003). It is entirely possible that stem cells will go the way of other highly publicized but disappointing technologies, such as gene therapy, the artificial heart, and fetal tissue transplants.

Speakers who exaggerate (to put it kindly—one could say misrepresent) the speed with which stem cell therapies could become available do patients no service. Unrealistic optimism can reinforce patients' and families' hopes for a miracle cure and then exacerbate their disappointment when they realize that clinical applications are nonexistent. Such unrealistic predictions are also bad for science—they risk a loss of public and congressional support if stem cell research fails to generate therapies quickly. Indeed, Thomson worries about the backlash in a few years, "when people say, 'What happened to stem cells?'" (Holden and Vogel 2002).

A third problem with the public debate is a failure on all sides to consider the distributive justice implications of stem cell research. Much stem cell research targets diseases of aging. Of course, it would be wonderful to prevent or delay conditions like Alzheimer's and heart disease. But as bioethicist Daniel Callahan has urged, we also ought to question "the research imperative: the view that medicine has an almost sacred duty to combat all the known causes of death" (Callahan 2000, p. 654). Thus, the debate over stem cell research should consider questions such as: what value should be assigned to the "regenerative medicine" that supporters claim will come from stem cell research? Should the ability to extend the average U.S. life span be a priority in biomedical research? Is it defensible for wealthy countries to devote substantial funds to research on diseases of aging, while allocating relatively little for the study of malaria, TB, and other diseases responsible for high rates of premature death worldwide?

We should also consider stem cell research in the context of access to health care. Health debates in this country place a disproportionate emphasis on stem cell research, research cloning, and other exotic investigational interventions. Indeed, support for stem cell research has become an effective yet undemanding strategy for politicians and other public figures seeking to show concern for suffering patients. Meanwhile, millions of people in this country lack access to quality health care. Many, many patients cannot obtain existing therapies that could extend and improve their lives. And the situation is much worse in developing nations. The desire to develop better treatments for future patients is understandable, but we should not forget that people today are often denied the benefits of past research breakthroughs. Thus, to advance the general goal of helping patients, we should not allow the stem cell issue to divert our elected leaders from this nation's deepening health care crisis.

Public and policy discussions should also acknowledge the challenge of supplying patients with any stem cell treatments that might emerge, treatments that would probably be expensive. Would stem cell therapies be available solely to the wealthy? If not, would already strapped managed care, Medicare, and Medicaid programs be required to cover these therapies? Of course, these are questions

that arise with many other biomedical innovations. But because helping patients is the ultimate ethical justification for conducting stem cell research, access to potential therapies should be part of the national discussion.

The final problem with the public debate over stem cell research is that it sometimes lacks civility. Partisans in the debate too often dismiss the concerns of those who disagree, and they dismiss as well the idea that deliberation, accommodation, and compromise might be warranted. For example, in an essay in *The Nation*, bioethicist Arthur Caplan portrayed research cloning opponents as a "bizarre alliance of antiabortion religious zealots and technophobic neoconservatives along with a smattering of scientifically befuddled anti-biotech progressives [who are] pushing hard to insure that the Senate accords more moral concern to cloned embryos in dishes than it does to kids who can't walk and grandmothers who can't hold a fork or breathe" (Caplan 2002, p. 5).

Other troubling remarks come from Irving Weissman, chairman of a National Academy of Sciences panel that endorsed research cloning. Writing in the *New England Journal of Medicine*, Weissman praised his panel for withholding judgment until "all the relevant data and information had been received and discussed." In contrast, he criticized the President's Council on Bioethics, which recommended a four-year moratorium on cloning, for being insufficiently informed and receptive to arguments that conflicted with members' preconceived notions (Weissman 2002, p. 1578).

Such charges are disturbing and raise questions about our country's ability to cope with the many moral and policy issues that science and biotechnology will bring in the coming years. As political scientists Dennis Thompson and Amy Gutmann have observed, bioethics controversies are increasingly debated in institutional settings, where theories of deliberative democracy become relevant. According to these writers, deliberative democracy has at its core "the idea that citizens and officials must justify any demands for collective action by giving reasons that can be accepted by those who are bound by the action. When citizens morally disagree about public policy, they . . . should deliberate with one another, seeking moral agreement when they can and maintaining mutual respect when they cannot" (Thompson and Gutmann 1997, p. 38).

Thompson and Gutmann's advice should guide future policy work on stem cell research. Currently, few government restrictions apply to embryonic stem cell research conducted with funds from the private sector (some states strictly limit embryo research, but others have laws promoting research with embryonic stem cells). Moreover, scientific and patient advocacy organizations are engaged in intense lobbying to expand the embryonic cell lines eligible for government support (Holden 2004; Weiss 2004).

At the same time, Congress has refused since the mid-1990s to permit federal funding for any research that destroys a human embryo (President's Council 2004, pp. 25–26). As long as this prohibition remains in force, NIH dollars will be unavailable to researchers seeking to develop new embryonic cell lines. Fur-

thermore, even the relatively liberal Clinton administration's stem cell research policy prohibited federal support for studies with cells from embryos created for research through either cloning or IVF (Kirschstein 2000). This suggests that producing human embryos purely for research purposes troubles people on different parts of the political spectrum.

Amid the questions about moral status, special respect, and whether stem cells will eventually yield safe and effective therapies, one thing is certain. Arguments over federal research policy will be resolved through the democratic process. People dissatisfied with the current situation, whether it is unhappiness with the absence of constraints on embryo research supported with private funds or unhappiness with limits on federal support for embryonic stem cell research, must accept that change will require working with others who do not share their precise views. Individuals on all sides of the debate may insist that policy incorporate their specific positions and possibly achieve nothing, or they may grant the legitimacy of competing views and try to craft points of agreement. Research proponents unwilling to seek common ground and an oversight system acceptable to those with differing views could end up hindering the very advances in knowledge they champion.

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