Clerics Urge Ban on Altering Germline Cells

A resolution endorsed by leaders of most major church groups could speed the establishment of a national commission

The leaders of virtually every major church group in the United States have signed a resolution calling for a ban on genetic engineering of human reproductive cells. The resolution has sparked a sharp controversy because the prohibition it seeks would be so broad that it would preclude attempts to correct some genetic disorders, such as Tay-Sachs disease, by manipulating germline cells. Even some of the signatories seem uncertain that they want to prohibit such work.

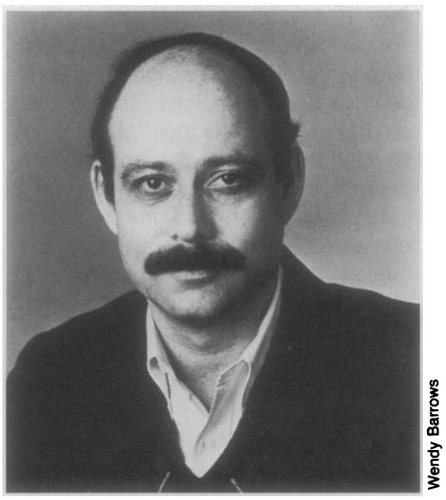
The immediate impact of the resolution will be to boost attempts in Congress to establish a commission to monitor genetic engineering with potential human applications. Ironically, however, the prime mover behind the resolution, author Jeremy Rifkin, says he is personally leery of such a commission because it would probably end up legitimizing rather than prohibiting some forms of genetic manipulation of reproductive cells. If so, he says, the commission would become a "eugenics commission."

The resolution simply states "That efforts to engineer specific genetic traits into the germline of the human species should not be attempted." A preamble notes that molecular biologists have already succeeded in altering the sex cells of mammalian species through genetic engineering, and warns that "the new advances in genetic engineering technology now raise the possibility of altering the human species."

The signatories span a vast political spectrum, from Avery Post, president of the liberal United Church of Christ, to Jerry Falwell, founder of the right-wing Moral Majority. They include the leaders of all the major Protestant church groups, a score of Catholic bishops, and the heads of a few Jewish organizations. How did such a diverse set of clerics come to agree on something as complex as genetic engineering? The credit for that goes to Rifkin.

Director of the Washington-based Foundation on Economic Trends, Rifkin is a veteran campaigner for various liberal and radical causes. He was a founder of the People's Business Commission, which provided a radical counterpoint to the Bicentennial celebrations, and has authored several books, including the best-selling *Entropy: A New World View*, a weaving together of philosophy, economics, and the second law of thermodynamics. He has been active in the debate about genetic engineering since the mid-1970's, and began collecting support for the resolution in August last year.

Rifkin circulated among church leaders a 10-page "Theological Letter Concerning the Moral Arguments Against Genetic Engineering of the Human Germline Cells." Apocalyptic in tone, it stated that "It will soon be possible to engineer and produce human beings by the same technological design principles as we now employ in our industrial processes," and laid out a case against tampering with human germline cells based on an ecological and a moral argument.



Wendy Barrows

Jeremy Rifkin

Orchestrated the resolution

The ecological argument is that "eliminating so-called 'bad genes' will lead to a dangerous narrowing of diversity in the gene pool." In an interview, Rifkin argued that attempts to "cleanse the germline over tens or hundreds of years will lose traits that we later realize are important." He noted that many scientists have long warned about loss of genetic diversity in crop plants and suggested that "a good scientist cannot have it both ways" by ignoring a potential loss of diversity in the human species.

The moral argument concerns negative eugenics: "the elimination of so-called biologically undesirable characteristics." In his theological letter, Rifkin argues that "Once we decide to begin the process of human genetic engineering, there really is no logical place to stop. If diabetes, sickle cell anemia, and cancer are to be cured by altering the genetic makeup of an individual, why not proceed to other 'disorders': myopia, color blindness, left handedness. Indeed, what is to preclude a society from deciding that a certain skin color is a disorder?"

Rifkin's theological letter was drawn from his new book, *Algeny*, which was published last month and should reap some benefit from the publicity surrounding the resolution. Although those who signed the resolution did not formally endorse the letter, it formed the intellectual justification for the proposed ban and clearly spelled out the reasons why Rifkin believes *all* genetic manipulation of human germline cells should be prohibited. There should thus have been no misapprehensions among the signatories about what they were putting their names to.

Indeed, most of the signatories contacted by *Science* said that they do want germline cells declared off limits to all genetic engineering, including efforts to correct genetic diseases. Some, however, said that they are not yet sure they want a total ban, but signed the resolution to stimulate a broad public debate on the issues, and a few said they personally do not want to preclude some types of manipulation.

For example, Kenneth Teegarden, president of the Christian Church (Disciples of Christ) said in his "personal opinion," efforts to correct some genetic disorders might be beneficial, and he was under the impression that the resolution would not exclude them. Richard McCormick, a bioethicist at Georgetown University's Kennedy Institute, says he has not made up his mind about how broad the prohibition should be, but signed the resolution because he felt it was "the only way to raise the issue" and as "a semi protest" because there is no longer a high-level commission looking into the ethical problems posed by biomedicine. A similar sentiment was expressed by Walter Sullivan, Roman Catholic bishop of Richmond. "There has to be a discussion on all of this, and I don't see it coming from the scientific community."

Such motives have, however, come under fire. "Sometimes, when an urgent problem is being ignored, it may be justi-

fied to yell 'fire' just to get attention. But a false cry of fire is not needed in this case . . . the subject has actually been discussed intensively for more than a decade," says Alexander Capron, former executive director of the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. The commission, which expired on 31 March, recently issued a report calling for close monitoring of all human genetic engineering.

The commission's recommendation has already struck a responsive chord in Congress. The Senate Committee on Labor and Human Resources has approved in principle the reestablishment of a bioethics commission, although the details of its structure have yet to be worked out. And Representative Albert Gore, Jr., (D–Tenn.) has introduced legislation to set up an advisory commission on human genetic engineering. Gore's proposal has been attached to a budget bill for the National Institutes of Health and is expected to be approved by the House later this month.

Given the fact that the religious groups whose leaders signed the resolution contain perhaps 50 million voters, their message is likely to receive a sympathetic hearing on Capitol Hill. Gore, for example, has said in a statement that he believes the resolution supports his proposal, although he expressed reservations about precluding the use of genetic modification of germline cells to correct disorders responsible for some diseases. In any case, with the weight of the religious leaders behind them, proposals to create an advisory commission are now almost guaranteed passage.

Rifkin, however, has reservations about such an approach. He argues that a national commission is likely to end up determining which disorders should be corrected, thereby legitimizing the use of genetic engineering for negative eugenics. He says, however, that he could support the concept of a commission if its first task were to stimulate a broad public debate on the issues by holding public forums around the country and soliciting as wide a cross section of views as possible.

Capron outlines what is likely to be a central issue in such a debate: "Do we want to ask those people who suffer the ill effects of the genetic lottery to bear the heavy, and sometimes lethal, effects of our unwillingness to find a finely-tuned means of avoiding potential abuses of genetic alterations?" By calling for a ban, Capron argues that the religious leaders have answered that question in the affirmative.—**COLIN NORMAN**

High-Tech Soviet Problems

Although the Soviet Union has stepped up its efforts to acquire technology from the West in recent years, it is having a great deal of difficulty in using and assimilating the technologies it imports, according to a massive congressional study of the state of the Soviet economy.* Manufacturing plants based on Western technology are usually chronically slow in starting up and operate inefficiently when compared with similar plants in noncommunist countries, the study notes. Moreover, the imported technology is rarely transferred to other plants within the Soviet Union.

The picture painted by the study conflicts with the popular notion that the Soviets are getting considerable economic stimulus from imported technology. That notion has been put forward by officials in the Carter and Reagan Administrations to support curbs on high-technology trade with the Soviet Union in retaliation for Soviet behavior in Afghanistan and Poland.

The study, a compilation of papers written by experts from government, industry, and academia and published by the Joint Economic Committee, suggests that the Soviet economy in general is wracked by inefficiencies and will grow very slowly throughout the 1980's. It also notes that the Soviet Union is likely to face difficulties in energy production, and as a consequence Soviet planners have recently ordered an unprecedented shift of resources into the energy sector.

In the area of technology imports, a paper by George Holliday, a specialist in international trade and finance at the Library of Congress, concludes that "Soviet enterprises have encountered formidable problems in assimilating Western technology and have a poor record in using that technology to generate new hard currency earnings." Although Holliday points out that imported technology has played an important role in sectors such as the automobile and chemical industries, he notes that several studies have shown that even within these sectors there has been little diffusion of the technology.

Part of the reason that Soviet enterprises have imported technology is to build up the capability to manufacture high-quality goods for export, and thereby earn hard currency. But, according to a paper by Donna Gold, a research analyst in Soviet economics at the Library of Congress, "A lack of marketing experience, a reputation for poor maintenance and poor after-sales services, the production of goods ill-suited for Western needs, and a lack of knowledge of production techniques have made these products noncompetitive on the world market."

In light of these problems, "there is evidence that an important debate is taking place among Soviet officials about the wisdom of continuing to allocate large amounts of hard currency to the importation of Western technology," Holliday reports. The reassessment, he notes, has appeared in the press and in statements from prominent officials, including former General Secretary Leonid Brezhnev. The emergence of this debate coincided with a decline in technology imports in the late 1970's.

As for energy policy, an analysis by Thane Gustafson, a Soviet specialist at the Rand Corporation, indicates that the Soviet leadership has recently embarked on an investment program that makes energy the nation's top industrial priority. "The swing of resources to that sector has been so dramatic that it cramps the development of the rest of Soviet industry at a time when the overall growth rate of investment resources has slowed to its lowest level in the post-war period," he argues. Energy production alone will soak up a staggering 85.6 percent of all additional industrial investment in the current 5-year plan, he reports.

Moreover, according to Gustafson, the Soviets have taken a huge gamble in banking heavily on natural gas to increase overall energy production. The strategy is risky because it requires rates of production and pipeline building that the Soviets have never reached before, and raises the possibility that "By the mid-1980's the Soviets could end up simultaneously with a gas glut and a shortage of everything else."—**COLIN NORMAN**

**Soviet Economy in the 1980's: Problems and Prospects*, Joint Economic Committee, 1983.