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Fetal Tissue in Research

There is an element of nostalgia in many of the current attacks on research, a vague wish for a simpler era in which further scientific advances are not needed. The antivivisectionists in the 1800s said that research had gone far enough. Few take such an extreme stand now, but there is a wistful questioning. "What if we could do research without animals? What if we could do research that was never applied to weapons? What if we could do research with no toxic side products?" The list of "what if's" is endless. And scientists have their own nostalgia. What if we could be allowed to do our research without getting embroiled in moral and political issues? None of these "what if's" will be realized because each addresses part of a problem without examining it in its entirety.

The issue of fetal research was in the forefront of the news last week because it was the subject of a soul-searching debate, the focus of a possible executive order, and the source of a scientific breakthrough. To some it is a simple issue: fetal tissue is discarded tissue that cannot live on its own, cannot do the mother any good, and might provide us with research knowledge or medical therapy. Organs are donated from living people; blood is provided at request; placentas are routinely used for studies in medicine. Why should there be any particularly emotional response to discarded fetal tissue? The answer is that the most useful and appropriate fetal tissue is that from induced abortion, and the issue of induced abortion is highly controversial. Scientists, like all other citizens, have a right to political opinions on the controversy, but there is a big stake in making certain that the scientific aspects are separated from the political ones.

The importance of fetal tissue has already been demonstrated. The use of this material in therapy for certain kinds of neurological diseases has had some encouraging results in animals and some mixed results in humans. The incorporation of human fetal tissue into a mouse, reported in *Science* last week (see J. M. McCune *et al.*, page 1632), offers an opportunity of untold dimension for study of the development of the human immune system and for possible therapy in specific human diseases, such as AIDS. The alternative animal model in that case involves infection of chimpanzees, primates whose use creates emotional responses also, and they are a species that is endangered. Other applications of fetal tissue are for therapy against infectious diseases and in diabetes, for patients receiving cancer chemotherapy at levels that wipe out the bone marrow, and for bone marrow transplants in preparation for other organ transplants. To the nonscientist, fetal tissue may seem like any other, but fetal cells are less developed and are more malleable and willing to grow than mature cells. Mature cells are too differentiated to be useful in many circumstances.

Prohibition of use of such a major new means to prevent and alleviate suffering seems unthinkable. And yet such a prohibition may come about if scientists are not sensitive to the inevitable consequences of such advances on moral precepts and social traditions that are centuries old. It will be crucial for scientists to make it clear that they do not intend to encourage induced abortion in order to supply material for research. Encouragement of abortion for the purpose of research is unacceptable. Scientists must take the stand that the decisions to live or die, decisions in such cases as abortion, brain-dead individuals on life support, or terminally ill individuals, are matters for decision based on political considerations in a complex society. Once the live or die decision has been made on these grounds, the decision to use tissue that would otherwise be discarded seems straightforward. Taking the kidney from a brain-dead victim of an automobile crash has not led scientists to encourage automobile accidents, and fetal tissue can be used without reference to the arguments surrounding induced abortion. There are some who will regard all such options around death as ghoulish. But to most individuals donation of organs to help others provides a touch of altruism and an intimation of immortality that mitigate the sting of death.

The nostalgia of those who long for a smaller and simpler world is romanticized to include only those features that the wisher advocates. What if we had all the advantages of modern civilization with one-tenth the people on the globe? A far better world, as long as I am one of those who survive. What if research had been stopped in the 1800s? We would have had no polyethylene or nuclear bombs or chlorinated insecticides, but we also would have had no penicillin, no vaccines, no television, and no central heating. The fetal research issue is one of many in which shouting about rights—the right to choice, the right to life, the right to do research—is not helpful. A *modus vivendi* in which progress is ensured and sensitivities are recognized is the only right way.—DANIEL E. KOSHLAND, JR.