LETTERS

Academic Freedom

Despite the amount of coverage already devoted to the Steven Mosher incident (News and Comment, 13 May, p. 692; Letters, 24 June 1983, p. 1334), it appears that a major issue has yet to be discussed. The issue, and this was especially true of the letter from Irving Louis Horowitz, is whether graduate programs, especially Ph.D. programs, should be controlled by the relevant graduate faculty or by graduate students, administration, the media, and the courts. An implicit assumption appears to be that Mosher had a right to a Ph.D. One wonders what happened to the Stanford faculty's rights to decide who may study. Horowitz questions the denial of due process and the denial of research autonomy (although one could question whether the research of a Ph.D. candidate should be autonomous) but fails to question the denial of academic freedom—deciding who should obtain a Ph.D. and what the criteria should be—to the Stanford faculty. Furthermore, Horowitz implies that only scholarship and not behavior should determine who is awarded a Ph.D. One can only hope that graduate programs ignore this suggestion and instead continue to, by their actions and teaching, attempt to instill a sense of professional responsibility in their graduate students.

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Genetic Engineering

The resolution by Jeremy Rifkin and others (News and Comment, 24 June, p. 1360) is a straw man which implies that scientists are lined up ready to alter the germline to correct human genetic disorders. A careful appraisal of the facts indicates quite differently.

In order to be able to do genetic manipulation of a specific gene it will be necessary to clone and sequence the normal and mutant gene. Once this is accomplished we would have the expertise to be able to do prenatal diagnosis of this condition. This then means that the only conditions that would potentially require alteration of the zygote would be those in which there was no chance of a normal child developing. The only such situations occur when both parents are homozygous for an autosomal recessive gene that is (i) mild enough to allow them to live to reproductive age and remain sufficiently healthy to want to marry and raise a family and (ii) severe enough to justify genetic intervention. These are almost mutually excluding conditions. They would also have to be unable or unwilling to adopt and opposed to a simple solution, namely artificial insemination. I suggest that individuals who satisfy all of these criteria are virtually nonexistent and hardly justify all of the publicity, setting up of presidential commissions, and international and national news coverage this contrived issue has brought.

For those individuals who for religious or moral reasons are opposed to prenatal diagnosis, the alternative is to use whatever treatments are available for the given condition. It certainly does not justify altering the germline because most such individuals would have only a 25 to 50 percent risk of having an affected child, and one certainly would not attempt to manipulate the germline when there is a 50 to 75 percent chance that the fetus is normal. In this case one would use standard nutritional, biochemical, and medical treatments for different genetic diseases, or use gene therapy on somatic (nongermline) cells only.

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The concern of representative religious leaders and certain scientists about dangers of genetic engineering of human sex cells is objectively reported by Norman. His article is one of many to appear recently in the news media and professional journals that demonstrate the need for widening public discussion of this latest question on the agenda of bioethics.

As research proceeds and debate develops, it will be seen that we are dealing with much more than the simple, but important, question of freedom of scientific investigation. We are not launching balloons of fantasy about "manufacturing humans," nor are we attempting to block with religious dogmas the amazing and promising advance of genetic science toward effective therapy and elimination of genetic diseases.

At the core of the issue is the perplexing problem of risk assessment. How far can research with nonhuman mammals, especially primates, provide reasonable assurance that it would be safe to exchange "good" genes for "bad" ones in human zygotes? Would one or two or more generational cycles be required to determine whether deleterious side effects are avoidable?

As Bernard D. Davis stated recently (Editorial, 25 Mar., p. 1381), "manipulations of embryo cells that damaged even one child in a thousand would be intolerable." Make that 10,000. Or 100. Where is the boundary?

This is pragmatic reasoning to be sure, but nonetheless theological. Our theological concern is for the good of each and every human being as a creature of the caring God. Most talk of "playing God" is silly. More serious is the very cautious use of our inventive intelligence to protect and enhance all the human lives which, we believe, somehow belong to God.

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Hamster Chromosome

I would like to correct two errors in the discussion of my photograph in the 1 July issue (AAAS News, p. 45). First, the magnification of the Chinese hamster chromosome is ×19,000, rather than ×8400. Second, the chromosome was isolated from a cell rather than a nucleus, since there is no nucleus in a dividing cell. As a cell enters mitosis (cell division), the nuclear membrane breaks down, and the chromatin condenses to form discrete chromosomes, such as the one illustrated in the photograph.

I urge the AAAS to continue their annual science photography contest in recognition of the major role photography plays in the everyday investigations of science and technology.

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Primates and Malaria

In Gina Kolata's article about cyclosporin (Research News, 1 July, p. 40), it is stated that the drug "also works in owl monkeys, which are the only primates that get malaria" (p. 42, column 3). I know of several people who would have been much happier and in much better condition if that were true.

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