

Debating the Human Genome Project

BY NATALIE MACLELLAN

"What scientists say about the world is not the world," said Harvard University Zoology professor Richard Lewontin, to an overflowing lecture room at Dal this month. Lewontin, along with Dr. Michael Ruse, professor of philosophy at the University of Guelph, were participating in the Austin and Hempel Lectures. Their debate centred around the Human Genome Project.

DNA has long been hailed as

the master molecule, the blueprint for life, the key to who we are. Sequencing the human genome, we've been told, will give us the secret to what it really means to be human. Not so, argued Dr. Lewontin.

"Sequencing the human genome will tell us," he said sarcastically, "what the sequence of the human genome is. And that's about it."

Lewontin scoffed at the idea of the human genome as "the grail which provides sustenance to all

who drink from it." Knowing the sequence of a gene, or many genes that we've never seen before, is no good to us if we do not know the function of the gene. Determining the function of an unknown gene is much more work (and hence, more money) than sequencing that gene could ever be.

Medical geneticists tend to glorify the human genome project as a necessary step in understanding many hereditary or DNA-linked diseases. Once we know the

sequence of the human genome, they promise, we'll be only steps away from cures for diseases like cystic fibrosis, Huntington's disease, Tay Sach's, or sickle cell anemia. Wrong again, said Dr. Lewontin.

"We do not have a single case where knowledge of a gene has led to therapy for that genetic disorder," he said. "Of course one day we may have a case, and it will be the most potent propaganda you can imagine."

Lewontin argued that prenatal diagnosis and therapeutic abortion is not a therapy. "To equate the prevention of a disease with the prevention of a life is a great philosophical error," he said.

"If we continue to make promises we cannot keep, and we cannot," continued Lewontin, speaking for (and to) geneticists and molecular biologists, "the only result will be cynicism."

Following Dr. Lewontin's presentation, Dr. Michael Ruse was invited to give a rebuttal. What followed was somewhat of a half-hearted debate which seemed to focus more on criticising each other's speaking style than on the actual points made by either side.

In closing, Dr. Ruse called on all involved in the human genome project to move beyond saying, "There are difficulties here," and "There are problems here," and to move on to the next level of discussion: How difficult will it be to use the information provided? What are the costs involved?

Despite the fact that both speakers presented sound arguments against the human genome project, both also made it clear that they are not against the project itself, only the propaganda surrounding it. Even if the project does nothing more than expand human knowledge, it is still a worthwhile endeavour. Although there may be no direct use for this information when it is finally acquired, it can serve as an invaluable stepping stone in years to come.

The Austin and Hempel Lectures, which Ruse and Lewontin participated in, is a series of distinguished lectures sponsored by the Department of Philosophy in cooperation with the Department of Biochemistry, Dalhousie University, and the University of King's College. The funding for the lectures is provided by an anonymous donor.

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Explaining Eugenics

BY NATALIE MACLELLAN

Since the beginnings of agriculture, man has been manipulating crops and selectively breeding livestock to produce better yields. Early in the twentieth century, scientists began to suggest that perhaps the human population could also be improved by this process.

Eugenics, a Greek term for "good in birth", was used to define this process of human improvement. The study of human genetics throughout the first part of this century was dominated by this desire to breed better people. The idea caught on quickly with governments in North America and Europe, and much money was targeted towards research in the field. Many governments went as far as passing sterilization laws against people possessing undesirable traits. The most obvious example, of course, is the Nazi attempt to install a German Master race that started with sterilization laws and ended with death camps.

Fifty years after Hitler's defeat, genetic advances are providing eugenic tools beyond any Nazi's wildest dreams. The majority of genetic research is medical but the knowledge accumulated may have a wider impact than initially expected. (I'm sure Einstein never intended that his research result in nuclear weapons.)

The elimination of undesirables in a population has been given the civilized title of negative eugenics. Current constitutions in most industrialized countries will now protect genetically imperfect people from involuntary sterilization, but negative eugenics has taken on a new and uglier face: "home-made eugenics".

New technologies allow for prenatal diagnosis, meaning undesirable fetuses can be eliminated before they legally become human

and thus protectable. Many couples are now opting for these tests, and insurance companies are even offering to pay for them, provided the child is aborted if found to be diseased and/or handicapped.

Prospective parents can also chose the sex of their children, aborting a child if it is not of the sex they would prefer. In the future, parents may also have the choice of children destined to be more intelligent, more athletic, or better looking.

An improved human race presents many alluring benefits, attracting a variety of supporters of eugenics. The most impressive benefit is the money that could be saved on health care. Institutions in place to care for handicapped people could almost be eliminated, as would the cost of treating those who suffer from genetic diseases such as cystic fibrosis or sickle-cell anemia. The possible consequences of having an intellectually superior race of people are yet undetermined, yet promising.

The problem with eugenic science is that it is rooted in social prejudices. At first glance, creating a race of Einsteins and Mozarts is appealing. It's only until one considers the elimination of anyone who doesn't match up to those standards, that the real ugliness of eugenics comes to light.

There is also the danger of creating a genetic lower class that will be discriminated against for possessing potentially dangerous genes, although they themselves may be unaffected.

In the beginnings of the eugenic movement, targeted undesirables were, in general, in a much more vulnerable position than they are now. People with disabilities are now not only politically protected, but have friends in the media and medical professions who can help protect them from the threat of eugenics.

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