

Guest Editorial

Bioethics: a challenge for scientists and for Public Policy

"Bioethics" means the study of ethical issues arising from human involvement with life. Bioethics looks at benefits and risks, and also at balancing pursuit of individual autonomy with the duties of justice. It could be called simply the "love of life". Love is a broad term, but includes the concepts of balancing benefits and risks. Love is the desire to do good and the need to avoid doing harm. It includes love of others as oneself, the respecting of autonomy. It also includes the idea of justice, loving others and sharing what we have – distributive justice. It includes assessment of technology in the biological sciences, and medical and environmental issues that are new and old.

There have been some claims that bioethics is only an issue for countries which have sufficient resources, wealth and time to decide whether or not to introduce biotechnology. However, this view comes from a narrow perspective of the term bioethics. There are at least three parts that compose the subject bioethics: descriptive, interactive and prescriptive ethics. Descriptive ethics looks at the values of an organism, and the interactions that occur in the social or ecosystem. It includes the areas of anthropology, natural history, psychology and sociology. Interactive ethics is one of dialogue between two persons who are willing to change their views and values as a result of the dialogue and debate. It includes seeking public involvement in decisions about applications of biotechnology, for example. The third type, prescriptive ethics, is where someone or somebody tells others what is good or bad, and what values they should have. The extension of this is law, which defines the limit of what behaviour is tolerated by society.

It, therefore, is apparent that bioethics is "done" by all societies. It is not unique to any culture, and a range of cultures have set up bioethics committees. A bioethics committee is a group of people from different disciplines, ideally including members of the general public, who come together to discuss rationally specific issues of bioethics. This helps guide scientists, medical practitioners and policy makers in taking decisions about the adoption of biotechnology. For example, should a woman be allowed to seek assisted reproductive technology when her husband disagrees or the society makes it difficult for her to inform him? Should a patient be allowed to enter a clinical trial? Should a parent be allowed to consent to the

transfer of bone marrow from one young child to another, a sibling? What sensitive type of information about blood typing or family relationships should be kept private?

It is a proud person, and perhaps an arrogant one, who says that he knows all the answers to these questions. Technical ability is important in decisions where the success of an operation will alter the person's decisions about use of a medical option. However, we all have some different values and these should be respected. The next question becomes how wide are variations in values and thinking, a question which occupies the science of descriptive bioethics. Again we must subdivide and look at two levels: individual/family, and the social and community systems.

All societies have a biotechnological base, whether they be hunter/gatherer or agricultural in base, using land, sea and air as sources of food and clothing. There is a long history of rural/urban divisions within societies and the development and evolution of classes based on different roles within society. There are many parallels in the creation of cultural hierarchies. Trade in agricultural products and medical services also has a long history through millennia. Medical professionals developed ethical codes, but farmers and marketers of food generally did not have a written code or practice. The crops and animals grown depend upon climate, but the balance of cereals and grains, meat and fish, and vegetables and fruit is common to most cultures.

An outward lifestyle choice, like vegetarianism, can arise from moral,

religious or dietary reasons. Religious taboos as found in Buddhism and Hinduism upon eating meat have shaped agricultural practices, as have the bans on eating pigs in Islam and Judaism. Given the moral and religious diversity in almost all societies however, it is very rare to find legal bans to enforce the practice. Rather, consumer choices influence market availability. Recently individual moral choices or health diets have led to adoption of vegetarianism in societies without such religious traditions. Modern biotechnology can learn from these practices, that people's choices of food are not only on price or taste. One of the questions for the coming few years is the adoption and acceptance of food made from genetically modified organisms.

With the internationalization of many countries the differences that we see are between individuals within society, rather than between societies. During 1993 mail response surveys were conducted among the general public in Australia, Hong Kong, India, Israel, Japan, New Zealand, the Philippines, Russia, Singapore and Thailand, in order to look at how people think about life, nature, and selected issues of science and technology, biotechnology, genetic engineering, and genetic technology. The diversity of views in this international Bioethics Survey was generally similar within each country, suggesting that if we look at individuals there is universal diversity across a common range of opinions.

The general support for products of genetic engineering like disease resistant crops or tastier tomatoes, seems to be high, especially if they are claimed to be more

healthy. When specific details of an application were given there is generally greater acceptance, suggesting people have some discretion. People may approve applications if they see benefits, not only to themselves but also to the environment and other people. This discretion is one measure of the bioethical maturity of society. However, in India and Thailand more than 50% of the respondents supported enhancement of physical characters, intelligence, or making people more ethical in human gene therapy. At least 15–20% of people in all countries surveyed agree with enhancement, and the proportion is of concern to those who consider enhancement to be unethical.

What is universal is that people are supportive of science and technology in general, and many appear to balance benefit and risk, showing discretion over the use of genetic engineering for enhancement in agricultural applications, and realistic reasoning in responses to questions. This conflicts with the commonly held position that the public is uneducated and naive about the application of biotechnology. That claim is based on the argument that new technology presents novel choices which is wrong, some choices between alternative crops and methods have existed before, even if the means for effecting them were less efficient. Universal bioethics does not mean identical decisions, but it does mean that the range of decisions in any one society are similar to those found across the whole world.

Although people have always faced risk, and at least in this century, have faced technological forces which transform society,

biotechnology has more critics than most. Opinion studies suggest many of the claims that critics make may not represent the views of ordinary people. Perhaps this influence is nowhere stronger than in Europe, as seen in the controversy associated with the bans on the use of bovine somatotropin made by genetic engineering to boost milk production, and on the criticism of the US FDA which opposes labels on products associated with genetic engineering. An educated public should assess the claims made by different groups, depending upon the trust they have in them, and may alter its views.

Bioethics also makes us examine our democratic structure. Public opinion is seldom influential in determining public policy and there are no effective means used by the public to change policy. The adoption of bioethics and bioethical reasoning is set to transform modern culture, as it leads to the establishment of multi-disciplinary fora which in themselves represent a transformation of society structure.

In Japan, for example, there has been concern about bioethical issues such as environmental pollution, suspicion of the medical profession and its paternalism, and the question of brain death. Public discussion of bioethics has only begun in the last few years. The delay is more related to the structure of Japanese society than to any difference between individual person's attitudes in Japan and Western countries. When individuals are asked to give their reasoning for their opinions over bioethical issues such as genetic manipulation of humans or animals, there is as much variety in opinions expressed by members of the

general public in Japan as in India and other countries surveyed. Many people perceive simultaneously both benefits and risks from science and technology. The diversity of reasoning exposed in the survey was independent of education or age, and similar diversity of reasoning was found among members of the public, high school biology teachers, and scientists.

Bioethical decision-making involves recognition of the autonomy of all individuals to make free and informed decisions providing that they do not prevent others from making such decisions. This is consistent with democratic principles, and the extent to which a society has accepted this is one criterion of the success of bioethics. However, the structured paternalism of some Asian societies is built on the idea that only the views of so-called experts should be heard. It also means that their views should not be questioned. This guiding ethic is in conflict with the principles of civil rights that lead to bioethics debate and the establishment of some national forums in Europe and North America. The development of public discussion affects many aspects of culture in any country, including politics and the hierarchy of society

In order to synthesise better solutions and processes, and help scientists faced with demands of their conscience and the ever-demanding public who are becoming more educated, bioethics should be developed. Part of this is development of more cross-culturally applicable guidelines, which can arise after discussion in many countries and at international forums. These issues should be discussed in order to arrive at opinions which are consistent with the recognition of our duties to all others on this planet and to aid the sustainability of human society and the environment in a global age.

BIBLIOGRAPHY

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Bioethics is becoming more discussed in major journals such as *Science* or *Nature*. See on-line Internet links and resources at Eubios Ethics Institute.

<<http://www.biol.tsukuba.ac.jp/~macer/index.html>>

DARRYL MACER, Ph.D.
*Institute of Biological Sciences,
 University of Tsukuba,
 Tsukuba Science City,
 Ibaraki 305, JAPAN*