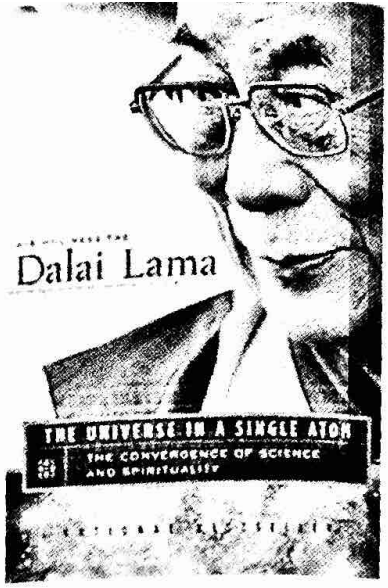
THE DALAI LAMA



Tenzin Gyatso is the fourteenth Dalai Lama and the leader of the Central Tibetan Administration—the government-in-exile of Tibet. Gyatso was declared at two years old to be the reincarnation of an earlier Dalai Lama; at the age of fifteen he assumed the roles of religious and political leader of the Tibetan people. The only Dalai Lama to visit the West, Gyatso has become notable for gaining Western sympathy for the cause of a free Tibet and for authoring or coauthoring more than fifty books. Among his many honors are the Nobel Peace Prize (1989) and the U.S. Congressional Gold Medal (2006).

In *The Universe in a Single Atom* (2005), the Dalai Lama tries to reconcile religion with science, claiming that religion and science are parts of the same path to ultimate truth. Relying on just one, he suggests, is incomplete at best and "impoverishing" at worst. Simply following the rationale of science that everything "is reducible to matter and energy leaves out a huge range of human experience," and the opposite approach "can lock us into fundamentalist cages" that deny proven facts. According to the Dalai Lama, we must attempt to bridge this gap between our different ways of thinking.

In "Ethics and the New Genetics," a chapter from *The Universe in a Single Atom*, the Dalai Lama focuses on the field of genetic engineering. The potential benefits of this area of science are enormous, but the Dalai Lama reminds us to bear the potential costs in mind: "The higher the level of knowledge and power," he writes, "the greater must be our sense of moral responsibility" (p. 133). He argues that the speed of scientific progress in recent years has outpaced our society's ethical development, raising questions of what to do about possible breakthroughs in the future, when to trust our instinctual reactions, and what consequences science can have on culture and society.

In an age when stem cell research is controversial, the Dalai Lama urges us in this essay to craft ethical standards that can guide us in the complex decisions involved when technology intersects with life.

▶ TAGS: ***ethics, biotechnology, human dignity, social changes, research***

Questions for Critical Reading

1. What sort of ethical standards should we have for fields with profound implications like genetic engineering? As you read the Dalai Lama's essay, locate quotations that support your proposed system of ethics.

2. What are the keys to developing an ethics apart from religion? Search the Dalai Lama's essay for quotations that support your position.

3. As you read the Dalai Lama's text, look for specific quotations that suggest the conditions necessary for the use of genetic technologies. Are such technologies ever justified, in his view?

Ethics and the New Genetics

Many of us who have followed the development of the new genetics are aware of the deep public disquiet that is gathering around the topic. This concern has been raised in relation to everything from cloning to genetic manipulation. There has been a worldwide outcry over the genetic engineering of foodstuffs. It is now possible to create new breeds of plants with far higher yields and far lower susceptibility to disease in order to maximize food production in a world where the increasing population needs to be fed. The benefits are obvious and wonderful. Seedless watermelons, apples that have longer shelf lives, wheat and other grains that are immune to pests when growing in the field — these are no longer science fiction. I have read that scientists are even experimenting to develop farm products, such as tomatoes, injected with genes from different species of spiders.

But by doing these things, we are changing the genetic makeup, and do we really know what the long-term impact will be on the species of plants, on the soil, on the environment? There are obvious commercial benefits, but how do we judge what is really useful? The complex web of interdependence that characterizes the environment makes it seem beyond our capacity to predict.

Genetic changes have happened slowly over hundreds of thousands of years of natural evolution. The evolution of the human brain has occurred over millions of years. By actively manipulating the gene, we are on the cusp of forcing an unnaturally quick rate of change in animals and plants as well as our own species. This is not to say that we should turn our backs on developments in this area — it is simply to point out that we must become aware of the awesome implications of this new area of science.

The most urgent questions that arise have to do more with ethics than with science per se, with correctly applying our knowledge and power in relation to the new possibilities opened by cloning, by unlocking the genetic code and other advances. These issues relate to the possibilities for genetic manipulation not only of human beings and animals but also of plants and the environment of which we are all parts. At heart the issue is the relationship between our knowledge and power on the one hand and our responsibility on the other.

Any new scientific breakthrough that offers commercial prospects attracts tremendous interest and investment from both the public sector and private enterprise. The amount of scientific knowledge and the range of technological possibilities are so enormous that the only limitations on what we do may be the results of insufficient imagination. It is this unprecedented acquisition of knowledge and power that places us in a critical position at this time. The higher the level of knowledge and power, the greater must be our sense of moral responsibility. 5

If we examine the philosophical basis underlying much of human ethics, a clear recognition of the principle that correlates greater knowledge and power with a greater need for moral responsibility serves as a key foundation. Until recently we could say that this principle had been highly effective. The human capacity for moral reasoning has kept pace with developments in human knowledge and its capacities. But with the new era in biogenetic science, the gap between moral reasoning and our technological capacities has reached a critical point. The rapid increase of human knowledge and the technological possibilities emerging in the new genetic science are such that it is now almost impossible for ethical thinking to keep pace with these changes. Much of what

is soon going to be possible is less in the form of new breakthroughs or paradigms in science than in the development of new technological options combined with the financial calculations of business and the political and economic calculations of governments. The issue is no longer whether we should or should not acquire knowledge and explore its technological potentials. Rather, the issue is how to use this new knowledge and power in the most expedient and ethically responsible manner.

The area where the impact of the revolution in genetic science may be felt most immediately at present is medicine. Today, I gather, many in medicine believe that the sequencing of the human genome will usher in a new era, in which it may be possible to move beyond a biochemical model of therapy to a genetically based model. Already the very definitions of many diseases are changing as illnesses are found to be genetically programmed into human beings and animals from their conception. While successful gene therapy for some of these conditions may be some way off, it seems no longer beyond the bounds of possibility. Even now, the issue of gene therapy and the associated question of genetic manipulation, especially at the level of the human embryo, are posing grave challenges to our capacity for ethical thinking.

A profound aspect of the problem, it seems to me, lies in the question of what to do with our new knowledge. Before we knew that specific genes caused senile dementia, cancer, or even aging, we as individuals assumed we wouldn't be afflicted with these problems, but we responded when we were. But now, or at any rate very soon, genetics can tell individuals and families that they have genes which may kill or maim them in childhood, youth, or middle age. This knowledge could radically alter our definitions of health and sickness. For example, someone who is healthy at present but has a particular genetic predisposition may come to be marked as "soon to be sick." What should we do with such knowledge, and how do we handle it in a way that is most compassionate? Who should have access to such knowledge, given its social and personal implications in relation to insurance, employment, and relationships, as well as reproduction? Does the individual who carries such a gene have a responsibility to reveal this fact to his or her potential partner in life? These are just a few of the questions raised by such genetic research.

To complicate an already intricate set of problems, I gather that genetic forecasting of this kind cannot be guaranteed to be accurate. It is sometimes certain that a particular genetic disorder observed in the embryo will give rise to disease in the child or adult, but it is often a question of relative probabilities. Lifestyle, diet, and other environmental factors come into play. So while we may know that a particular embryo carries a gene for a disease, we cannot be certain that the disease will arise.

People's life choices and indeed their very self-identity may be significantly affected by their perception of genetic risk, but those perceptions may not be correct and the risk may not be actualized. Should we be afforded such probabilistic knowledge? In cases where one member of the family discovers a genetic disorder of this type, should all the other members who may have inherited the same gene be informed? Should this knowledge be made available to a wider community — for instance, to health insurance companies? The carriers of certain genes may be excluded from insurance and hence even from access to health care all because there is a possibility of a particular disease manifesting itself. The issues here are not just medical but ethical and can affect the psychological well-being of the people concerned. When genetic disorders are

detected in the embryo (as will increasingly be the case), should parents (or society) make the decision to curtail the life of that embryo? This question is further complicated by the fact that new methods of dealing with genetic disease and new medications are being found as swiftly as the genes carrying individual disease are identified. One can imagine a scenario in which a baby whose disease may manifest in twenty years is aborted and a cure for the disease is found within a decade.

Many people around the world, especially practitioners of the newly emerging discipline of bioethics, are grappling with the specifics of these problems. Given my lack of expertise in these fields, I have nothing concrete to offer in regard to any specific question — especially as the empirical facts are changing so rapidly. What I wish to do, however, is think through some of the key issues which I feel every informed person in the world needs to reflect upon, and to suggest some general principles that can be brought to bear in dealing with these ethical challenges. I believe that at heart the challenge we face is really a question of what choices we make in the face of the growing options that science and technology provide us.

At heart the challenge we face is really a question of what choices we make in the face of the growing options that science and technology provide us.

Attendant on the new frontiers of genetically based medicine there is a series of further issues which again raise deep and troubling ethical questions. Here I am speaking primarily of cloning. It has now been several years since the world was introduced to a completely cloned sentient being, Dolly, the famous sheep. Since then there has been a huge amount of coverage of human cloning. We know that the first cloned human embryos have been created. The media frenzy aside, the question of cloning is highly complex. I am told there are two quite different kinds of cloning — therapeutic and reproductive. Within therapeutic cloning, there is the use of cloning technology for the reproduction of cells and the potential creation of semi-sentient beings purely for the purpose of harvesting body parts for transplantation. Reproductive cloning is basically the creation of an identical copy.

In principle, I have no objection to cloning as such — as a technological instrument for medical and therapeutic purposes. As in all these cases, what must govern one's decisions is the question of compassionate motivation. However, regarding the idea of deliberately breeding semi-human beings for spare parts, I feel an immediate, instinctive revulsion. I once saw a BBC documentary which simulated such creatures through computer animation, with some distinctively recognizable human features. I was horrified. Some people might feel this is an irrational emotional reaction that need not be taken seriously. But I believe we must trust our instinctive feelings of revulsion, as these arise out of our basic humanity. Once we allow the exploitation of such hybrid semi-humans, what is to stop us from doing the same with our fellow human beings whom the whims of society may deem deficient in some way? The willingness to step across such natural thresholds is what often leads humanity to the commission of horrific atrocities.

Although reproductive cloning is not horrifying in the same way, in some respects its implications may be more far-reaching. Once the technology becomes feasible, there could be parents who, desperate to have children and unable to do so, may seek to bear

a child through cloning. What would this practice do to the future gene pool? To the diversity that has been essential to evolution?

There could also be individuals who, out of a desire to live beyond biological possibility, may choose to clone themselves in the belief that they will continue to live in the new cloned being. In this case, I find it difficult to see any justifiable motives — from the Buddhist perspective, it may be an identical body, but there will be two different consciousnesses. They will still die.

One of the social and cultural consequences of new genetic technologies is their effect on the continuation of our species, through interference with the reproductive process. Is it right to select the sex of one's child, which I believe is possible now? If it is not, is it right to make such choices for reasons of health (say, in couples where a child is at serious risk of muscular dystrophy or hemophilia)? Is it acceptable to insert genes into human sperm or eggs in the lab? How far can we go in the direction of creating "ideal" or "designer" fetuses — for instance, embryos that have been selected in the lab to provide particular molecules or compounds absent in genetically deficient siblings in order that the children born from such embryos may donate bone marrow or kidneys to cure siblings? How far can we go with the artificial selection of fetuses with desirable traits that are held to improve intelligence or physical strength or specific color of eyes for instance?

When such technologies are used for medical reasons — as in the curing of a particular genetic deficiency — one can deeply sympathize. The selection of particular traits, however, especially when done for primarily aesthetic purposes, may not be for the benefit of the child. Even when the parents think they are selecting traits that will positively affect their child, we need to consider whether this is being done out of positive intention or on the basis of a particular society's prejudices at a particular time. We have to bear in mind the long-term impact of this kind of manipulation on the species as a whole, given that its effects will be passed on to following generations. We need also to consider the effects of limiting the diversity of humanity and the tolerance that goes with it, which is one of the marvels of life.

Particularly worrying is the manipulation of genes for the creation of children with enhanced characteristics, whether cognitive or physical. Whatever inequalities there may be between individuals in their circumstances — such as wealth, class, health, and so on — we are all born with a basic equality of our human nature, with certain potentialities; certain cognitive, emotional, and physical abilities; and the fundamental disposition — indeed the right — to seek happiness and overcome suffering. Given that genetic technology is bound to remain costly, at least for the foreseeable future, once it is allowed, for a long period it will be available only to a small segment of human society, namely the rich. Thus society will find itself translating an inequality of circumstance (that is, relative wealth) into an inequality of nature through enhanced intelligence, strength, and other faculties acquired through birth.

The ramifications of this differentiation are far-reaching — on social, political, and ethical levels. At the social level, it will reinforce — even perpetuate — our disparities, and it will make their reversal much more difficult. In political matters, it will breed a ruling elite, whose claims to power will be invocations of an intrinsic natural superiority. On the ethical level, these kinds of pseudonature-based differences can severely

undermine our basic moral sensibilities insofar as these sensibilities are based on a mutual recognition of shared humanity. We cannot imagine how such practices could affect our very concept of what it is to be human.

When I think about the various new ways of manipulating human genetics, I can't help but feel that there is something profoundly lacking in our appreciation of what it is to cherish humanity. In my native Tibet, the value of a person rests not on physical appearance, not on intellectual or athletic achievement, but on the basic, innate capacity for compassion in all human beings. Even modern medical science has demonstrated how crucial affection is for human beings, especially during the first few weeks of life. The simple power of touch is critical for the basic development of the brain. In regard to his or her value as a human being, it is entirely irrelevant whether an individual has some kind of disability — for instance, Down syndrome — or a genetic disposition to develop a particular disease, such as sickle-cell anemia, Huntington's chorea, or Alzheimer's. All human beings have an equal value and an equal potential for goodness. To ground our appreciation of the value of a human being on genetic makeup is bound to impoverish humanity, because there is so much more to human beings than their genomes.

20

We cannot imagine how such practices could affect our very concept of what it is to be human.

For me, one of the most striking and heartening effects of our knowledge of the genome is the astounding truth that the differences in the genomes of the different ethnic groups around the world are so negligible as to be insignificant. I have always argued that the differences of color, language, religion, ethnicity, and so forth among human beings have no substance in the face of our basic sameness. The sequencing of the human genome has, for me, demonstrated this in an extremely powerful way. It has also helped reinforce my sense of our basic kinship with animals, who share very large percentages of our genome. So it is conceivable if we humans utilize our newly found genetic knowledge skillfully, it could help foster a greater sense of affinity and unity not only with our fellow human beings but with life as a whole. Such a perspective could also underpin a much more healthy environmental consciousness.

In the case of food, if the argument is valid that we need some kind of genetic modification to help feed the world's growing population, then I believe that we cannot simply dismiss this branch of genetic technology. However, if, as suggested by its critics, this argument is merely a front for motives that are primarily commercial — such as producing food that will simply have a longer lasting shelf life, that can be more easily exported from one side of the world to the other, that is more attractive in appearance and more convenient in consumption, or creating grains and cereals engineered not to produce their own seeds so that farmers are forced to depend entirely upon the biotech companies for seeds — then clearly such practices must be seriously questioned.

Many people are becoming increasingly worried by the long-term consequences of producing and consuming genetically modified produce. The gulf between the scientific community and the general public may be caused in part by the lack of transparency in the companies developing these products. The onus should be on the biotech

industry both to demonstrate that there are no long-term negative consequences for consumers of these new products and to adopt complete transparency on all the possible implications such plants may have for the natural environment. Clearly the argument that if there is no conclusive evidence that a particular product is harmful then there is nothing wrong with it cannot be accepted.

The point is that genetically modified food is not just another product, like a car or a portable computer. Whether we like it or not, we do not know the long-term consequences of introducing genetically modified organisms into the wider environment. In medicine, for instance, the drug thalidomide was found to be excellent for the treatment of morning sickness in pregnant women, but its long-term consequences for the health of the unborn child were not foreseen and proved catastrophic.

Given the tremendous pace of development in modern genetics, it is urgent now to refine our capacity for moral reasoning so that we are equipped to address the ethical challenges of this new situation. We cannot wait for a series of responses to emerge in an organic way. We need to confront the reality of our potential future and tackle the problems directly.

I feel the time is ripe to engage with the ethical side of the genetic revolution in a manner that transcends the doctrinal standpoints of individual religions. We must rise to the ethical challenge as members of one human family, not as a Buddhist, a Jew, a Christian, a Hindu, a Muslim. Nor is it adequate to address these ethical challenges from the perspective of purely secular, liberal political ideals, such as individual freedom, choice, and fairness. We need to examine the questions from the perspective of a global ethics that is grounded in the recognition of fundamental human values that transcend religion and science.

It is not adequate to adopt the position that our responsibility as a society is simply to further scientific knowledge and enhance our technological power. Nor is it sufficient to argue that what we do with this knowledge and power should be left to the choices of individuals. If this argument means that society at large should not interfere with the course of research and the creation of new technologies based on such research, it would effectively rule out any significant role for humanitarian or ethical considerations in the regulation of scientific development. It is essential, indeed it is a responsibility, for us to be much more critically self-aware about what we are developing and why. The basic principle is that the earlier one intervenes in the causal process, the more effective is one's prevention of undesirable consequences.

In order to respond to the challenges in the present and in the future, we need a much higher level of collective effort than has been seen yet. One partial solution is to ensure that a larger segment of the general public has a working grasp of scientific thinking and an understanding of key scientific discoveries, especially those which have direct social and ethical implications. Education needs to provide not only training in the empirical facts of science but also an examination of the relationship between science and society at large, including the ethical questions raised by new technological possibilities. This educational imperative must be directed at scientists as well as laypeople, so that scientists retain a wider understanding of the social, cultural, and ethical ramifications of the work they are doing.

Given that the stakes for the world are so high, the decisions about the course of research, what to do with our knowledge, and what technological possibilities should

be developed cannot be left in the hands of scientists, business interests, or government officials. Clearly, as a society we need to draw some lines. But these deliberations cannot come solely from small committees, no matter how august or expert they may be. We need a much higher level of public involvement, especially in the form of debate and discussion, whether through the media, public consultation, or the action of grassroots pressure groups.

Today's challenges are so great — and the dangers of the misuse of technology so global, entailing a potential catastrophe for all humankind — that I feel we need a moral compass we can use collectively without getting bogged down in doctrinal differences. One key factor that we need is a holistic and integrated outlook at the level of human society that recognizes the fundamentally interconnected nature of all living beings and their environment. Such a moral compass must entail preserving our human sensitivity and will depend on us constantly bearing in mind our fundamental human values. We must be willing to be revolted when science — or for that matter any human activity — crosses the line of human decency, and we must fight to retain the sensitivity that is otherwise so easily eroded.

How can we find this moral compass? We must begin by putting faith in the basic goodness of human nature, and we need to anchor this faith in some fundamental and universal ethical principles. These include a recognition of the preciousness of life, an understanding of the need for balance in nature and the employment of this need as a gauge for the direction of our thought and action, and — above all — the need to ensure that we hold compassion as the key motivation for all our endeavors and that it is combined with a clear awareness of the wider perspective, including long-term consequences. Many will agree with me that these ethical values transcend the dichotomy of religious believers and nonbelievers, and are crucial for the welfare of all humankind. Because of the profoundly interconnected reality of today's world, we need to relate to the challenges we face as a single human family rather than as members of specific nationalities, ethnicities, or religions. In other words, a necessary principle is a spirit of oneness of the entire human species. Some might object that this is unrealistic. But what other option do we have?

I firmly believe it is possible. The fact that, despite our living for more than half a century in the nuclear age, we have not yet annihilated ourselves is what gives me great hope. It is no more coincidence that, if we reflect deeply, we find these ethical principles at the heart of all major spiritual traditions.

In developing an ethical strategy with respect to the new genetics, it is vitally important to frame our reflection within the widest possible context. We must first of all remember how new this field is and how new are the possibilities it offers, and to contemplate how little we understand what we know. We have now sequenced the whole of the human genome, but it may take decades for us fully to understand the functions of all the individual genes and their interrelationships, let alone the effects of their interaction with the environment. Too much of our current focus is on the feasibility of a particular technique, its immediate or short-term results and side effects, and what effect it may have on individual liberty. These are all valid concerns, but they are not sufficient. Their purview is too narrow, given that the very conception of human nature is at stake. Because of the far-reaching scope of these innovations, we need to examine all areas of human existence where genetic technology may have lasting

implications. The fate of the human species, perhaps of all life on this planet, is in our hands. In the face of the great unknown, would it not be better to err on the side of caution than to transform the course of human evolution in an irreversibly damaging direction?

In a nutshell, our ethical response must involve the following key factors. First, we have to check our motivation and ensure that its foundation is compassion. Second, we must relate to any problem before us while taking into account the widest possible perspective, which includes not only situating the issue within the picture of wider human enterprise but also taking due regard of both short-term and long-term consequences. Third, when we apply our reason in addressing a problem, we have to be vigilant in ensuring that we remain honest, self-aware, and unbiased; the danger otherwise is that we may fall victim to self-delusion. Fourth, in the face of any real ethical challenge, we must respond in a spirit of humility, recognizing not only the limits of our knowledge (both collective and personal) but also our vulnerability to being misguided in the context of such a rapidly changing reality. Finally, we must all — scientists and society at large — strive to ensure that whatever new course of action we take, we keep in mind the primary goal of the well-being of humanity as a whole and the planet we inhabit.

The earth is our only home. As far as current scientific knowledge is concerned, 35
this may be the only planet that can support life. One of the most powerful visions I have experienced was the first photograph of the earth from outer space. The image of a blue planet floating in deep space, glowing like the full moon on a clear night, brought home powerfully to me the recognition that we are indeed all members of a single family sharing one little house. I was flooded with the feeling of how ridiculous are the various disagreements and squabbles within the human family. I saw how futile it is to cling so tenaciously to the differences that divide us. From this perspective one feels the fragility, the vulnerability of our planet and its limited occupation of a small orbit sandwiched between Venus and Mars in the vast infinity of space. If we do not look after this home, what else are we charged to do on this earth?

Exploring Context

1. Visit the home page for the Human Genome Project (ornl.gov/sci/techresources/Human_Genome/home.shtml). How does the project address the kinds of ethical problems that concern the Dalai Lama? Is it consistent with your proposed system of ethics from Question 1 of Questions for Critical Reading?

2. Explore the website for the Presidential Commission for the Study of Bioethical Issues (bioethics.gov). Are government organizations equipped to answer the Dalai Lama's call for a new ethics governing these technologies? Does the Commission reflect your argument about a nonreligious ethics from Question 2 of Questions for Critical Reading?

3. London's Science Museum has an online exhibit about Dolly the sheep, the first cloned animal. Visit the site at sciencemuseum.org.uk/antenna/dolly/index.asp. In the aftermath of Dolly's life and death, what new ethical concerns should we consider?