

Chapter 1

Biology and the Constitution

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Our laws and institutions must move forward with the progress of the human mind.

—Thomas Jefferson

A few decades ago, genes and inheritance were still mysteries to science. The discovery of DNA, of how genetic characteristics are passed on between generations, and how genetic information is expressed and modified as a person matures, opened the door to understanding and manipulating these fundamental biological processes. Today, in many instances, we can modify genes and genetic inheritance to suit our own ends. Some deadly genetic diseases have been traced to their root causes—making it possible that in the future we will find a way to cure or avoid them. Genetic engineering holds out the hope for permanent cures for simple genetic disease, and is already providing better pharmaceuticals, crops, and industrial products. Other new biological technologies amplify the potential of genetic engineering, and still other biomedical technologies—computerized sensors, artificial prostheses, tissue implants—promise powerful new capabilities.

The application of new biological advances is not new. People have throughout history

used all means at their disposal to improve health, extend their life span, increase the quality and yield of food, have or avoid having children, and enhance their physical and mental capabilities. For thousands of years we have bred cattle and beans, used contraception and fertility enhancers, developed medicines, brewed drugs, and followed social customs thought to produce healthy children. These basic human desires have helped define individual rights within a society. Social custom, law, and government authority have regulated technologies in order to help individuals achieve these goals within the framework of their society. The U.S. Constitution was designed to guarantee individual rights and to bound the powers of government, while ensuring a place for societal interests. It guides the application of technologies in those murky areas between individual rights and societal interests, between individual privacy and freedom and the needs of government to carry out its duties and ensure the social welfare. New biotechnologies, because of their unprecedented power to extend human intervention, raise correspondingly unprecedented challenges to the Constitution and to the laws built on that constitutional foundation.

THE CONSTITUTIONAL CONCEPT OF MANKIND

The Constitution of the United States embodies an 18th century view of the nature of Man: a rational being, possessed of free will and amoral sense, endowed by his Creator with inalienable rights and inescapable responsibilities, accountable to the State and to his fellow men through the implicit contract to which he consents by continuing to live within a democratic republic.¹ His biological inheritance, his mental competence, and indeed to

a large extent his present physical and mental health were beyond his own power to control, or that of the State. And though Man had a natural right to Life, Liberty, and Property, in the real world all of those—like health, happiness, and the ability to beget children and raise them to adulthood—could be seen to depend on chance, fate, or the incomprehensible Will of God. They could be accepted, but seldom explained by science or controlled by human choice.

The common view of the human condition is different, now; in some ways it is less clear,

¹Use of the terms “Man” or “mankind” here reflects the 18th century assumption that it was in males that civic authority and moral responsibility were lodged.

less satisfying, less firmly grounded in philosophy and ethics. We may indeed cling to the ethical and spiritual truth in the constitutional assumptions about responsibility. Yet at the same time we often analyze human behavior in terms of environment or genes, infantile experiences or biochemical imbalances, socioeconomic deficits or neurocortical connections; and we oscillate between education and coercion, rehabilitation and conditioning, treat-

ment and punishment. In some ways, we have diminished the scope of accountability embodied in the 18th century political philosophy, but perhaps we have more than compensated for this; we have enhanced the 18th century concept of the fundamental equality of "all Men" by giving explicit recognition and practical effect to the principle that this includes women, and men and women of all races and all economic classes.

WHY THE "NEW BIOLOGY" RAISES CONSTITUTIONAL ISSUES

There are in summary several reasons why advances in biological knowledge and capability to intervene in human biology have implications for constitutional rights:

1. The capability for biological interventions, especially with regard to reproduction, bodily health, mental functions, and death, gives people new choices, and forces them to make decisions about things that were previously beyond our control. The question arises as to whether the State should or constitutionally can regulate such decisions in the public interest.
2. Biology-based technology, alone and in combination with other kinds of science and technology, increases the power of the State to enforce its laws and policies (e.g., by screening for drug use, or by using DNA typing for identification). These uses may intrude on the constitutionally guaranteed sphere of individual privacy.
3. The power to identify biological risks (e.g., exposure to infectious disease or genetic vulnerability to chemicals in the environment) often outstrips the capability to remove or reduce those risks. This raises a demand for social control measures that sometimes impinge on constitutional freedoms. Some of these are traditional public health techniques falling under States' "police power" but now often at odds with increased public expectations of, and judicial affirmation of, the scope of constitutional liberties.

4. The increasing possibility of effective intervention to prolong life, remove physical and mental handicaps, and enhance physical and mental performance reinforces the growing assertion of a "right to health care." Such assertions may be based on the contribution of Federal funding to the development of new medical capabilities, but are also often claimed as a constitutional right although no such right has been judicially recognized.
5. Biological knowledge is likely to impinge on formal or informal religious beliefs or at least on traditional formulations of religious doctrine. Because the evolution of English common law, classical political philosophy, constitutional government, and the doctrines of several European Christian churches are historically intertwined, the constitutional separation of Church and State requires repeated attempts to distinguish between religious values and common cultural values.

There are strong indications that biological research will provide increasing evidence for a genetic and biochemical basis for variations in human abilities and performance and for much human behavior, including some behaviors that we now regard as voluntary, and therefore punishable. New pharmaceuticals, psychosurgery, or other treatments will become available to moderate mental functions and modify behavior. Genetic engineering of human germ

cells or somatic cells could remove inherited mental traits.

Biology is allowing major human interventions at the boundary between life and death. By resting the definition of death on brain functions, we have raised the question of how much quality or competence in brain functioning is necessary for recognition of constitutional rights. By making it possible to artificially maintain bodily functions we have vested in some people, with or without their willingness, awesome responsibilities for making decisions about life and death for other people who can no longer decide for themselves. At the beginning of life, advancing technological capabilities have changed, and may further change, the point at which a new life is viable outside the womb—indeed, gestation from test tube to “birth” may someday be possible in artificial wombs, reflecting again the question of when constitutional rights begin.

Advances in biological sciences and technologies are creating choices, in situations where in the past people had no choice. Or, less positively, they force people to make decisions about situations that in the past were beyond human control. Increasingly (though not yet always) people can choose whether or not to reproduce, and in the future, they maybe able routinely to choose the gender of the child they wish to have, to select some of its genetic characteristics, to choose to use an embryo from other biological parents, or to donate their own embryos to others.

New biological knowledge and technologies give people powers to make critical decisions about the life and death of themselves, other people, and future generations. When technology allows people to make such choices or decisions, the question arises as to whether the State should regulate, or even absolutely control, those decisions. Constitutionally, this question becomes: would State intervention impinge on some individual liberty that is guaranteed by the Bill of Rights? and if so, is the individual’s interest in exercising that

right far outweighed by the contrary interest of the State, which is considered to be the public interest?

The balancing of the State interest with individual rights is forever going on, and where the balance is struck often involves two kinds of social change. One frequent factor is new technological capability that gives us new control of natural processes or new power to manipulate our physical and biological environment. The second is the rising expectation of self-determination and privacy.

Some traditional public health techniques, well established in law and in constitutional decisions as permissible under State police powers, are almost certain to be challenged anew because of today’s broader interpretation of individual rights of privacy and autonomy. This is occurring, for example, in the context of the AIDS epidemic with regard to techniques of mandatory reporting, contact tracing, mandatory testing, and partial or full quarantine. As the risks of environmental and workplace contaminants are increasingly revealed, the State could decide to use genetic screening technology (now at an early and unsatisfactory state of development, but likely to be made much more effective in the future) to write regulations forbidding some groups of people from assuming occupational or environmental risks to which they are especially vulnerable.

Many kinds of medical and genetic interventions raise complementary questions. First, when can the State, in the exercise of its police power, legitimately mandate preventive or therapeutic treatment, as it has long mandated vaccination, in the public interest? Second, should the Courts (or Congress) at some point in the future rule that there is a constitutional basis for a “right to health” or at least to health care? If, for example, interventions became possible (as a result perhaps of research at the National Institutes of Health) that would significantly control or slow aging and extend normal lifetimes, say by 25 years—would we leave it to market mechanisms to determine who received this “priceless” boon?

Decisions about kidney dialysis and organ transplants have so far obscured and delayed rather than answered this question, which is already being raised by some public interest groups not only as a public policy issue but as a constitutional challenge. They argue that Americans have an “equal protection” right to the results of medical research supported by taxpayers.

Recent decisions about the teaching of evolution or of “creation science” in public schools have not removed the possibility of further efforts to restrict either the teaching or the application of new biological knowledge on religious or quasi-religious grounds. There are strong indications that a major area of constitutional debate in the future will deal with conflicts between biological research objectives and procedures, on the one hand, and religious or ethical values on the other. The present debates over animal rights, research using fetal

tissue, patenting of human cell lines and derived biological, the safety of bioengineering laboratories, and release of engineered organisms in the environment, have some common grounds. Is there a constitutional right to do research? Should there be areas of “forbidden knowledge?” What values should be reflected in Federal research funding allocation and Federal guidelines?

This introduction to the report on “biology and the Constitution” contains many questions, and few answers. Indeed, this is true of the rest of the report. In looking into the future, much can be anticipated but little can be said with certainty. When we consider the triple uncertainties of rapidly advancing knowledge, steadily rising expectations of civil liberty and self-determination, and conflicting value systems that are themselves caught in turbulence and challenge, there are indeed few certain answers to the troublesome questions raised here.