THE TECHNOLOGICAL IMPERATIVE: REFLECTION ON REFLECTIONS

NICHOLAS CROTTY, C.P.

Catholic Theological Union, Chicago

IN THE PRECEDING ARTICLE Dr. Robert T. Francoeur points the way towards a *via media* in genetic science between, on the one hand, "an unlimited, unrestricted, undirected, socially aloof research" and, on the other hand, "a total retreat from our technological capacities and our God-given powers to create." His insistence on the need to search for that *via media* reveals his conviction that the so-called technological imperative is fatalistic and fallacious. As his essay unfolds, it presents interesting and illuminating material from the history of genetic research and technology and draws a succinct picture of what is or soon will be possible in this field. From the standpoint of Christian ethics all this raises a number of challenging issues. In this present article I shall attempt to discuss some of them.

A NEW IMAGE OF MAN

One can only applaud Francoeur's forthright presentation of man as called by his very personhood to be a cocreator. Within Roman Catholic moral theology we have, in fact, witnessed in recent years the emergence, to a great extent, of a new image of man; for many Christian ethicists within our communion have either abandoned the natural-law tradition of the moral-theology manuals or revised it out of all recognition. In that tradition creation was seen as a once-for-all event, and nature was viewed in a quite static fashion. Set in a world that creation presented to us as a given, our essentially immutable human nature and the tendencies embodied in it founded for us first principles of action. Thus, we believed, we were able to derive equally immutable norms of behavior that could be articulated and applied in rather serene independence of man's historical development and situation. Clearly, an approach of this sort evinces utter faith in the human mind's ability to grasp the inner, unchanging essences of things and to express these in concepts that remain perennially valid. In this perspective, strict limits were set to the moral permissibility of interventions in nature. True enough, the limits set often seemed difficult to understand or justify. One example was the physicism or biologism that resulted, especially in areas such as sexual ethics, where, as was patent in the course of the birth-control debate, even the physiology of ovulation achieved a certain sacrosanctity and in-

violability. Understandably, the heirs to this kind of world view and this kind of ethos tend to adopt a hands-off policy when faced with the possibilities opened up by reproductive technology and genetic programing and to deplore such enterprises as attempts to "play God."

Fresh perspectives, however, are now discernible in our moral theology. What Bernard Lonergan has pointed to in contemporary Catholic theology is true of moral theology in particular, viz., "Aristotelian analyses, concepts, words" are rapidly being replaced "with biblical words and images, and with ideas worked out by historicist, personalist, phenomenological, and existential reflection."[1] What has emerged and is emerging more and more is a dynamic, evolutionary view of human creation and human history. Creation is now being viewed not as something static but as something ongoing, and, indeed, as something that involves a collaboration of the human with the divine. Man's task is that of bringing to full growth the seed entrusted to him. Precisely because he is a self-conscious, free existence in the world, precisely because he is endowed with imaginative creativity, what he finds himself involved in and challenged by is not brute factuality, not sheer material circumstance, but what can be described only as a *human* situation. This means a situation that holds creative possibilities for him. Man can do something about his situation. As man, he is called to do something about it. This is human freedom. It is an "embodied" freedom, a "situated" freedom: not the freedom to realize absolute, abstract ideals and values as such, but the freedom to address himself to his situation, to seize upon its growing points, and so out of the worse to create the better. In man the universe has come to consciousness and because of him is subject no longer merely to natural evolution but to a historical evolution in which man has a guiding hand; for he is called to exercise in the world the creative responsibility that is his characteristic as a person.

Thus, the world is truly man's world. He is rooted in it by virtue of his very bodiliness. To be sure, he is not in the world as one object alongside other objects but, as a thinking and free being, he is in it in his own unique way. Nevertheless, he remains part and parcel of his material universe. For this reason it is never merely a material universe but a human world. Consequently, what man does in his world cannot be regarded as having merely physical effects. By every transformation of his environment man is shaping the very conditions of his existence

[1] Bernard Lonergan, "Theology in Its New Context," in *Renewal of Religious Thought*, ed. P. E. Léger (New York, 1970) pp. 34–46, at 39.

and life. In other words, he is changing himself. Man's call to creative initiative extends to his own nature. Human freedom means, ultimately, a self-creating. It has meant this from the start. Francoeur is surely correct in claiming that without some such image of man as creator we shall be unable to meet the challenges with which contemporary biotechnology is confronting us or with which the biotechnology of the near future will be confronting us.[2]

THE HUMAN AND THE TECHNICAL

Reproductive technology and genetic engineering are not, therefore, to be decried on the grounds that they constitute a forbidden intervention in nature. Horror and denunciation do not form an acceptable response to the possibilities being opened up to us, however understandable such a response may be, given our heritage. William Nicholls has written: "The natural reaction of the religious man to such new possibilities, whether it be birth control, artificial insemination, test-tube babies, or the indefinite prolongation of human life, is to assert that what was impossible is now forbidden by the law of God." Nicholls finds little cogency, however, in this line of reasoning and rejects "the notion of the boundary beyond which man cannot pass, and where the sphere of God begins."[3] The issues being posed here are not a matter of "playing God" but a question of truly playing man. If we do wrong in this regard, it will be not by invading a territory reserved to God but by dealing badly with the affairs of our own domain. The criterion here can only be that of human welfare. Whatever the courses of action we embark upon, whether in biotechnology or in any other sphere of human behavior, they must be calculated to be in the best interests of human personhood and human community and therefore predominantly constructive and beneficial rather than destructive of or inimical to authentic human values. There must be judgment, choice, and decision. Pointing up the problem inherent in "indeterminate freedom," Paul Tillich has written: "Theonomous culture includes technical self-limitation. Possibilities are not only benefits; they are also temptations, and the desire to actualize them can lead to emptiness and destruction. Both consequences are visible at present."[4]

[2] For a fuller consideration of the new image of man appearing in Catholic moral theology and of the need for it in the context of environmental problems, cf. Nicholas Crotty, C.P., "Catholic Moral Theology and Ecological Responsibility," *Religious Education* 66 (1971) 44–49.

[3] William Nicholls, "Christ and Man," in *Conflicting Images of Man*, ed. William Nicholls (New York, 1968) pp. 165–220, at 208.

[4] Paul Tillich, *Systematic Theology* 3 (Chicago, 1963) 259.

How visible are they to Francoeur? I am bothered by his glorification of the technical and the artificial. He cites as representative of his own position Joseph Fletcher's assertion that laboratory reproduction is more human—indeed, "radically human"—when compared to coital reproduction; for the former, in contrast to the latter, is "willed, chosen, purposed, and controlled," a matter of "choice, and not chance." I suggest that human willing, human choice, and human purpose ought not be tied in this way to "control" and that it is control and not choice that should be contrasted with chance. At least where control is possible, we can choose chance just as much as we can choose control. "The real difference," writes Fletcher, "is between accidental or random reproduction and rationally willed or chosen reproduction." On the contrary, the real difference is between, if not accidental, at least random reproduction and contrived, controlled reproduction. Both may be rationally willed and chosen.

It seems that in the thought of Fletcher and Francoeur what Tillich has called "technical reason" and "controlling knowledge" emerge as the hallmark of the genuinely human. Technical reason reduces reason to its cognitive side and, within the cognitive realm, to those cognitive acts only that deal with the discovery of means for ends. Tillich holds that since the breakdown of German classical idealism and in the wake of British empiricism the concept of technical reason has become predominant and has tended to replace the concept of reason that prevailed until Hegel, viz., the notion of reason as the structure of the mind which "enables it to grasp and to transform reality" and which "is effective in the cognitive, aesthetic, practical, and technical functions of the human mind." This broader concept of reason Tillich calls "ontological reason," and he asserts very incisively that technical reason, however refined in logical and methodological respects, dehumanizes man if it is separated from ontological reason.[5] Fletcher and Francoeur, I submit, have made that separation. They identify will, choice, and purpose with control, so that chance, whatever is not controlled, is therefore the less human.

Man the technician, however, is not an image of man capable of supplying meaningful, personal direction to authentic human existence. A pattern of behavior is more genuinely human not because it involves greater technical control by man but because it constitutes a human response to a human situation that embodies greater human value than do alternative responses. Consequently, where nonintervention is foreseen to be more promotive of human good than inter-

[5] Cf. *ibid.* 1 (Chicago, 1951) 72–73; cf. also pp. 97–100.

vention, where allowing nature to take its course is judged to be more in the interests of human persons and human fellowship than technical control, where unpredictability seems more favorable to human welfare than predictability, it is surely the former and not the latter that is truly human in this situation, nor can one deny that there is will, choice, and purpose in opting for the former in this situation. Medical experimentation under the Nazis was technically admirable, and Hiroshima and Nagasaki are monuments to technical skill and perfection. Yet what took place in these cases was ethically abhorrent. It was, in short, inhuman and antihuman; for the genuinely human is to be gauged from its consequences evaluated in the light of authentic human ideals and values rather than from the degree of technological control involved in the process. A given laboratory reproduction may indeed be more human than a given reproduction through heterosexual intercourse, but if it is, it is not because it is technically contrived and controlled rather than natural and random. I wholeheartedly agree with Francoeur when he says that "the varied and complex possibilities of our reproductive technology and genetic engineering will have to be examined, evaluated, and decided on in terms of the ever-changing consequences rather than on some a priori judgment that this or that technique violates some assumed God-given nature." I should want to insist, however, that this examination, evaluation, and decision be not based on another a priori judgment that Francoeur appears to accept, viz., that what is technologically controlled is *eo ipso* more human. Man's creativity means much more than technological control, and technology is not and cannot be self-justifying.

DIRECTION AND CONSTRAINT

Precisely because technology is not and cannot be self-justifying, I find it difficult to share Francoeur's optimism regarding the future direction that genetic science and biomedicine will take and our ability to handle the ethical and human issues they pose. He rejects any comparison with the nuclear scientists who developed the atom bomb for use by political authority, claiming that, whereas the development and use of the bomb was made without consultation or even the information of the public, the geneticists and biotechnicians are today informing the public and inviting them to share responsibility for decision-making and goal selection. He rejects also the idea of any outside control on the scientists, whether, e.g., by way of a legally enforced moratorium on research and application or by way of a deep-freeze information bank. Instead, he relies exclusively on "an effective

mass-media education and communications network with extended feedbacks from all areas of our global society." I wonder how realistic this is. Recent events (e.g., the publication of the Pentagon Papers) have shown us convincingly enough how difficult it is for a people to be truly informed or even not to be grossly deceived when political authorities or special-interest groups decide that it serves their purpose to keep the people ignorant or in error. One may indeed ask to what extent the American people have shared in decision-making and goal selection throughout the Vietnam War. Are today's genetic scientists and biotechnicians fully informing the public of what is possible and of what is actually being done? There are many people who believe that controversial experimentation is taking place in deliberate secrecy at the present moment. And, in point of fact, when and where has society been invited to share the responsibility for decision-making and goal selection in the field of genetics?

More than this, are the scientists themselves prepared to accept this sharing of responsibility? Are they prepared to accept limitations on their research and experimentation or on the use of their research and experimentation in the interests of human and social good? Some are, of course. George Wald shows awareness of the ethical issues in genetic engineering when he says:

> Technological design . . . is the process by which we have made all our domestic animals; and applied to men, it could yield domesticated men. We have bred domestic animals over many generations of controlled mating to be just what we want of them—the pigs to be fat, the cows to give a lot of milk, the work horses to be heavy and strong, and all of them to be stupid—all, that is, that we use rather than merely patronize as pets. Stupidity and docility are among the traits selected for first of all, for a clever or willful animal can make a lot of trouble. . . . Our technology has given us dependable machines and livestock; we shall have to choose whether to turn it now to giving us more efficient, convenient and reliable men, yet at the cost of our freedom.[6]

Wald is here pointing up only one of the many ethical issues that can realistically be envisaged. What will be the consequences of limiting the prolific diversity of genetic endowment, which, together with the problems and defects it propagates, has undeniably proved enriching throughout the story of man? What will be the consequences if children are not of their parents' active procreation or not borne by or born of their own mother, or if, as cloning would make possible, there are men

[6] George Wald, "Determinacy, Individuality, and the Problem of Free Will," in *New Views of the Nature of Man: The Monday Lectures, 1965*, ed. John R. Platt (Chicago, 1965) pp. 16–46, at 43–44, 46.

and women not procreated by a human couple at all? There will be many biological and psychological problems stemming from reproductive technology and genetic programing. Yet Wald's words refer to the fact that the issue is still broader. As Theodosius Dobzhansky has put it, "the problem involved here is sociological and even political, not only biological." Dobzhansky goes on:

> Indeed the more dependable and the more applied the breeding technique employed, the more certainly will politicians of all stripes try to control its goals and its uses. To ignore these issues is the height of irresponsibility.... I believe that what is needed is a frank recognition that the problem of human evolution is far wider than genetics or biology, or than science as a whole.

Dobzhansky insists that the real difficulty in this respect lies not in today's biological technologies but in "the lack of certainty—not to speak of the lack of general agreement—as to the goals which human evolution should aim at."[7] In other words, we have no viable, consistent, generally accepted image of man. Ernst Cassirer was conscious of this when he cited Max Scheler's warning of over forty years ago:

> In no other period of human knowledge has man ever become more problematic to himself than in our own days. We have a scientific, a philosophical, and a theological anthropology that know nothing of each other. Therefore we no longer possess any clear and consistent idea of man. The ever-growing multiplicity of the particular sciences that are engaged in the study of men has much more confused and obscured than elucidated our concept of man.

Cassirer's trenchant comment is that "our wealth of facts is not necessarily a wealth of thoughts."[8]

I therefore repeat and rephrase my earlier question: Are the scientists convinced that the problem of genetic manipulation and technological reproduction is far broader than genetics and biology? Are they prepared to accept that human intervention and control in this matter cannot be left up to the decision of the biotechnicians alone? Francoeur believes they are. The posture which he claims we traditionally allotted to the scientist in our scientific adoration—the posture of "an objective pursuit of reality" and an "unbiased search for the truths of nature" with no concern for "human values, social

[7] Theodosius Dobzhansky, "Evolution: Implications for Religion," in *Changing Man: The Threat and the Promise*, ed. K. Haselden and P. Hefner (New York, 1969) pp. 142–55, at 155.

[8] Ernst Cassirer, *An Essay on Man* (New Haven, 1944) p. 22. The quotation from Scheler is found in his *Die Stellung des Menschen im Kosmos* (Darmstadt, 1928) pp. 13–14.

repercussions, the uses and abuses of scientific and technological knowledge"—has, in his opinion, been abandoned as a delusion in the face of "the atomic mushroom and the specter of cloned humans." Willard F. Libby, however, the 1960 Nobel Prize winner in chemistry, witnesses to the fact that he has not abandoned this posture and claims to represent the stance of the majority of his fellow scientists:

> Fortunately for mankind and the world, we have passed beyond the time, in most societies at least, when scientific experiments are forbidden because of religious or sociological considerations. There is much debate whether social consciousness on the part of the scientist should dictate or control or limit his line of experimentation. I believe you will find that most scientists believe it should not, that the truth is always their goal, and that seeking the truth is their business and purpose.[9]

In view of this, there seems to be need for controls on the activities of genetic scientists, and Francoeur's suggested form of control appears inadequate. As in so many other fields, there is need both for enforceable laws and for a professional code of ethics. The difficulties Francoeur foresees in any legal restrictions here—the formulating and passing of such legislation, its universal and unbiased enforcement, the unwitting preclusion of unknown beneficial applications and spin-offs, the probable need to extend the legal restrictions, the occurrence of surreptitious lawbreaking—are common to all spheres of human behavior that are within the domain of legal constraint. Francoeur's exempting of scientists from such legal constraint and its attendant difficulties ("Every scientist would have his Big Brother") constitutes his own form of "scientific adoration." I suggest, furthermore, that a professional code of ethics in this area is urgently called for, nor is there time to allow the gradual cultural emergence of such a code, as has been the case generally in other fields. Dialogue on an international and cross-cultural level, in which ethical, social, and political considerations are taken into account as much as biological considerations, is needed and needed now. We must, as Karl H. Hertz puts it, "successfully institutionalize the process of bio-technical change."[10] Such successful institutionalization is unfortunately a necessity if we are to demonstrate that the technological imperative is no imperative and that, in the charting of the course of human destiny, more than technology is at the helm.

[9] Willard F. Libby, "Man's Place in the Physical Universe," in *New Views* . . . , pp. 1–15, at 6.

[10] Karl H. Hertz, "What Man Can Make of Man," in *Changing Man* . . . , pp. 101–11, at 107.

POSTSCRIPT

I should like, finally, to append some reflections not directly in response to Francoeur's article. In developing a viable policy controlling the course of genetic manipulation and reproductive technology, it would appear important to distinguish between genuinely and strictly therapeutic measures and those that are not therapeutic. By therapeutic measures I mean, first, those aimed at remedying defects which are clearly recognized and accepted as genetic disease. Gene therapy in this sense would be largely subject to the same ethical guidelines touching medical procedures in general. Therapeutic measures would also mean reproductive technology designed to remedy defects, at whatever stage in the process of reproduction, that prevent successful procreation by a given couple. I believe, however, that the complex and far-reaching problems we have been referring to emerge rather in regard to the nontherapeutic measures; for now it is a question not of providing a person with the health we all normally enjoy or of ensuring to a future child the normal biological heritage of men generally or of allowing a couple to procreate, as their brothers and sisters do, the child that they desire, but of attempting to fashion a person of a certain biological type or gratuitously to bring a person into being in technologically created ways. The consequences of this sort of action must be pondered well and long. And where the consequences are unknown or incalculable, inaction will surely be the more responsible decision.

In this sort of calculation one vital consideration must always be the capacity of human persons to adjust to the consequences, including the long-term consequences, and, throughout the process, to live and to grow precisely as human persons. We are, of course, limited in this respect by our biological patrimony and our psychological endowment. Human beings are not indefinitely malleable. Our "nature" restricts our capacity for change, as the personal and social problems consequent upon such things as industrialization and urbanization amply attest. There is, indeed, a "natural law" at work here—not, to be sure, a moral law as such, but certainly a factor to be reckoned with in any responsible ethical decision (a return, in a way, to Ulpian's "quod natura omnia animalia docuit"?). For example, if reproductive technology is given free rein, it will surely mean an end to marriage and parenthood as these have been known and understood throughout man's history. A new image of marriage and parenthood must follow. Do human beings have the capacity to embrace this new image, to involve themselves in the forms of "marriage" and "parenthood" that emerge, and in and through all this to develop and find fulfilment as human persons?

One hesitates to give a blithefully affirmative answer, given the profound difficulty so many experience today in marriage owing to the partial cultural breakdown of the traditional patterns, the institutional safeguards, and the established roles in marriage. This sort of consideration ought to be to the fore in any dialogue on policy regarding the future development and direction of genetic and reproductive technology. Hertz is putting the crucial question when he asks: "If what is unique about man is his 'personhood'—man as a self-conscious center of action—must we not incorporate this as a constant into our biotechnology? And how?"[11]

[11] *Ibid.*, p. 111.