

GENETICS, JUSTICE, AND RESPECT FOR HUMAN LIFE

by *Daniel R. DeNicola*

The question is before us: Shall we control our genetic legacy? We who are the only known centers of consciousness and responsible action yet to emerge from the evolutionary process now have achieved the possibility of taking the controls of evolution into our own hands and making ourselves a "self-modifying system." The prospect both excites and frightens us, as well it should, for it is quite literally a fateful decision.

Not only is genetic control a pressing issue of social policy; it is fundamentally an ethical issue. But let us be clear what sort of ethical issue it is. It is not the kind of moral dilemma used as a paradigm in textbooks on moral philosophy: It is not the question of whether a particular person should, under certain circumstances, perform action *A* or *B*. It is a question as to whether people collectively should permit or prohibit certain practices. As John Rawls has pointed out, justifying a practice is different from justifying a particular action falling under a practice.¹ (E.g., the justification of punishment as a social practice is procedurally different from the justification of the punishment of a particular felon for a specific offense.) The ethical issue of interest concerns the justification of a practice. The question is whether the human community should engage in the application of genetic knowledge to human reproduction, using, if so, what general procedures and techniques.

We should not assume that, simply because we can identify genetic control as an ethical issue, we have an ethical theory that is capable of dealing with the issue. There are anomalous cases for theories of ethics as there are for theories of physics or molecular biology. Keeping this in mind, I propose to test the practice of genetic control

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[*Zygon*, vol. 11, no. 2 (June 1976).]

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against two basic and widely acknowledged ethical ideals or principles: justice and respect for human life. I shall assume that both of these principles are valid (under some interpretation) and that any practice which violates either is *ipso facto* immoral.² It may turn out that these principles, despite their important roles in the more venerable ethical traditions of our culture, can give us little guidance concerning the practice of genetic control; that is what we shall determine. But, in any event, the principles themselves are under review as much as proposals for genetic control. Toward the end I shall return to the matter of the theoretical adequacy of contemporary ethics for dealing with genetic control.

One preliminary remains. The term "genetic control" has not yet been defined. I intend to use the term in a rather broad way; specifically, by "genetic control" I mean any deliberate attempt to control the quality of the human gene pool through the application of genetic knowledge. This includes direct genetic manipulation through the alteration or construction of specific genotypes (for instance, "genetic surgery"). It also includes indirect genetic manipulation focused on specific phenotypes (for instance, selective breeding involving artificial insemination or voluntary sterilization based on genetic counseling). Finally, this definition includes both "negative" and "positive" eugenics; that is, it includes attempts to eliminate undesirable genes or traits from the gene pool as well as attempts to introduce new genes or traits or to spread existing desirable genes or traits throughout the gene pool. The definition excludes attempts to control population size *per se*, rather than population quality. It also excludes therapeutic attempts to mask or neutralize genetic defects (for instance, providing insulin to diabetics), though such medical triumphs have implications for the problem at hand, for they permit what some call the "pollution" of the gene pool. This broad understanding of "genetic control" permits a comprehensive examination. I shall step down from this rather sweeping purview only when differing ethical implications necessitate conceptual distinctions.

Let us now turn to the ideal of justice.

JUSTICE

Justice is the ideal of social ethics that establishes the moral propriety of allocations; its attendant principle asserts that the distribution of goods and evils is not to be arbitrary but is to conform to some pattern or procedure.³ It does seem plausible, therefore, that the allocation of natural assets and deficiencies might be expected to conform to the ideal of justice—especially when this allocation can be effected through deliberate genetic manipulation. Indeed, the genetic en-

dowment each individual receives can be of such enormous and lasting value or disvalue that the problem of the assignment or distribution of genes might seem to be a central and primary case for the consideration of justice and, what is the same, for worry about injustice. Curiously, there has been almost no mention of the ideal of justice in the literature of genetic control.

The first problem we encounter in applying justice to genetic control is one that is not unique to the ideal of justice. Its traditional interpretations were formulated before recent developments in genetics. This means that the ideal of justice was intended to apply to a world in which the distribution of natural assets was a "given," a world in which the particular genetic endowment a person possessed was not selected by anyone. The genes one gets are determined by chance, by "reproductive roulette," as Joseph Fletcher would have it, or by divine providence. Rawls puts the view well: "The natural distribution is neither just nor unjust; nor is it unjust that men are born into society at some particular position. These are simply natural facts."⁴ One's genes, one's point of origin in the social environment—these are morally arbitrary. Ethics deals with the sphere of human choices, and ethical ideals are irrelevant to that which is beyond human choice. Of course, our problem is that the assignment of genes is fast becoming a matter of human choice; the genetic inheritance we bequeath to future generations may not, therefore, be morally arbitrary.

We have not yet reached the bottom of this difficulty, however. If we had, we could merely announce that the ideal of justice, like other ethical ideals, must henceforth be applied to a newly opened arena of human decisions: the composition of the human gene pool. Not only must societies distribute human rights, advantages, privileges, goods, and punishments justly; they must insure a just allotment of genetic material. Of course, we would still have to determine what a just genetic allotment would look like. And we would have to acknowledge that it does strain one's ethical equipment to live in times like these, when the range of human choices increases exponentially, particularly when the newly cleared field of choices involves some important aspect of human life that has previously been in the wilderness of chance, of fortune, of the "morally arbitrary." But this answer will not suffice, for the difficulty runs deeper—as we would quickly discover were we to attempt to carry out a determination of a just distribution of genetic material.

At the base of the difficulty lies this fact: In most of its interpretations, the principle of justice presupposes a context in which individuals are already in place, fully equipped with their tally of natural

assets and liabilities. In other words, the ideal of justice seems, in its very conceptual logic, to be tied to the notion of the "given" set of inherited traits. To seek a just distribution of genetic material is futile; it betrays a misunderstanding of the concept of justice.

A few examples will illustrate this point. The meritocratic interpretation of distributive justice holds that all persons should be treated according to their merits, achievements, abilities, or excellences. This view, obviously, requires that persons have merits (or demerits), abilities (or disabilities), etc., in order for the ideal of justice to be operational. The capitalistic interpretation holds that justice is rewarding persons according to their actual productive contribution. Clearly, the productivity that one can exhibit is tied to one's genetic inheritance (among other factors). The interpretation sometimes called "the puritanical view" holds that justice is treating persons according to their efforts, their sacrifices, their work expended (regardless of actual accomplishment). Again, this view requires that individuals be in place and have a track record before any justice determinations are possible. It makes no sense on any of these three interpretations to ask how justice requires us to deal out the genetic holdings to a future generation, for individuals who do not as yet exist cannot have merits or abilities, or have demonstrated productivity, or have made efforts and sacrifices. In brief, justice is a function of natural assets and liabilities or of deeds they make possible; one cannot, therefore, discuss the justice of a distribution to individuals who do not as yet exist and who do not, as a result, possess any of the elements required for the specification of what is their due.

Basic to most interpretations of justice is the concept of *desert*. Justice involves a consideration of what particular persons deserve. But what set of genes does a person deserve? Does anyone deserve his genetic endowment? With the exception of those who believe in reincarnation, few theorists have ever claimed that anyone deserves his natural assets and liabilities. On this view, one does not deserve his personal resources, but one does deserve what one makes of them. It is not the hand that one is dealt but how one plays it that determines desert. Notice that one implication of this view is that while it is neither just nor unjust for a child to be born with a serious and debilitating genetic defect, it is not just to prevent it either, or unjust not to prevent it. Some other ethical ideal may be applied, of course, but no action is required by justice.⁵

I have claimed that most interpretations of justice presuppose a given natural distribution of human traits. I should say also that there are two opposing attitudes toward this natural distribution; most theories of justice express a blending of the two extremes. The first

attitude prizes the inequality of the genetic distribution. As Robert Nozick has said recently, "Whether or not people's natural assets are arbitrary from a moral point of view, they are entitled to them, and to what flows from them."⁶ Those who take this attitude generally envision the just society as one which allows each person's natural assets full sway. Equality of opportunity is valued as a free-market arrangement in which one's genetically dependent strengths and weaknesses can flower and bear fruit. The other attitude regards the inequalities of the natural distribution as a moral predicament calling forth social action. A just society is one which will, to some extent, work to balance the morally arbitrary differences of birth; it will compensate natural liabilities and ease the misfortune of genetic defects. Those most advantaged owe a portion of service to those least advantaged. An equal claim on the good life for all regardless of genetic inheritance is an objective of just social policy. The first attitude presupposes one's genes to be one's personal property (rather like inherited wealth); the second presupposes each person to have an equal claim on the totality of assets and liabilities which comprises the gene pool. Naturally, very few theorists have one of these attitudes to the complete exclusion of the other; but, though both attitudes are present, one usually predominates. Of such differences of emphasis are opposing political theories made.

(It is interesting to note that what really is under consideration in all the views discussed is the phenotype, not the genotype. For instance, equality of natural assets means equality of phenotype, even if there is a difference of genotype. Some of the views of justice discussed here would receive remarkable alterations were the genotype to be used to determine natural assets and liabilities.)

We appear to have come to a cul-de-sac. Justice cannot be applied to genetic control because it presupposes some given genetic distribution. Though two different attitudes may be taken regarding the given distribution, the principle of justice cannot cope with the distribution itself. This state of affairs represents a defect in the conceptions of justice I have been discussing. It is one thing to say that a person born with a severe genetic defect cannot today claim injustice; he is left to try to fathom divine providence, or to shake his fist at the universe, or to be resigned to the cruel joke played on him by fate. It is quite another thing to say he cannot claim injustice if his defect (even if only a defect in comparison with some others) was selected for him, was chosen for him by other human beings.

There are, I believe, three ways of escape from this blind alley—only one of which I find acceptable. The first alternative would retain the interpretations of justice I have been discussing. My prob-

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lem has arisen, on this view, because I have assumed that the justice or injustice to be done by genetic control was justice or injustice to the individual(s) whose genetic makeup is to be controlled. But what of the justice or injustice to be done to the parents of these individuals? If justice presupposes some given natural distribution, we may still inquire what sort of offspring particular parents deserve by virtue of their merits or abilities, or their productivity, or their efforts. Thus, while children do not deserve their parents, parents may deserve their offspring. My response to this rather gruesome argument is twofold. First, it assumes the continuation of parenthood (or, at minimum, the nuclear family), which some would have us eliminate. Second, and much more important, it assumes that a person's individuality (namely, a child's) can be earned by another person (namely, a parent). This view ignores the integrity of the child and treats him/her as a commodity to be assigned as a reward or punishment to some other person. It violates the principle of respect for persons that I shall examine later. Of course, we say that an unlucky parent did not deserve his genetically defective child—but that does not mean that the parent deserved a genetically superior one either.

The second alternative is to introduce the ideal of equality. The radical egalitarian interpretation of justice holds that justice is treating people equally. Even those who hold the other interpretations I have discussed might say that, in the absence of differential claims of merit, productivity, or effort, all should be treated equally. A just genetic distribution, therefore, would be one that conforms to the ideal of equality. There are, however, several difficulties with this line of argument: (1) The notion of equality of genetic endowment is ambiguous. Does it refer to an identity of genotype such as might be achieved in a clone? Or does it refer, instead, to an equal balance of desirable and undesirable traits for each individual, though the particular traits selected might vary considerably? (2) The principle is purely formal; it says nothing about the nature of any of the genes to be distributed. For instance, it would be just, by this principle, to distribute a very defective set of genes as long as it was distributed to each individual—even if it is just as easy to distribute a very healthy and adaptive set of genes. (3) It is a biological fact that uniformity of genetic endowment among individuals is not desirable for the viability of the species. A healthy gene pool is not homogeneous. Such attempt at homogeneity would violate the principle of respect for human life in a different way from the first alternative. Of course, this criticism assumes that by "equality" of genetic endowment is meant "identity of genotype."

The third alternative—the one I find acceptable—is one I have

derived from Rawls's much-discussed work, *A Theory of Justice*.⁷ Rawls does not, unfortunately, go beyond hinting at a relationship between his theory of justice and the practice of eugenics. As a first step, it is necessary to offer the briefest summary of Rawls's theory. Rawls sets up an "original position" from which persons are to establish a social contract; their task is to select the principles of justice which will be operative in the society in which they will hold membership. But this selection is to be made behind a "veil of ignorance"; this means that, although the persons are rational, self-interested, and capable of a "sense of justice," they do not know their own identity, that is, they do not know what position they will occupy in the society they are ordering. Although they do not even know their own values, they are aware that they do have values, that they do have hopes and plans they will want to pursue. Rawls claims that persons so situated in this position of fairness will invariably adopt a "maximin rule": They will attempt to maximize the minimum position. Their strategy will be to "hedge their bets" by improving the worst position in the society to the greatest extent because they realize that once they step from behind the veil of ignorance they may find they occupy any position—including the worst one. In particular, Rawls asserts that the following two principles would be adopted for structuring the basic institutions of society: (1) "Each person is to have an equal right to the most extensive basic liberty compatible with a similar liberty for others," and (2) "Social and economic inequalities are to be arranged so that they are both (a) to the greatest benefit of the least advantaged and (b) attached to offices and positions open to all under conditions of fair equality of opportunity."⁸ These two principles of justice would be the inevitable outcome of the decision made in the original position. The principles are just because they would be selected under fair conditions.

Although this is but a rough sketch of a subtle and extraordinarily rich theory, it contains the main features relevant to our inquiry. I want to argue that some of these features permit Rawls's theory of justice to apply to genetic control. First, notice that in Rawls's interpretation the given natural distribution is not in place; it is, in fact, suspended, hidden from the very parties who are to choose the principles of justice. Second, Rawls proposes a procedural interpretation of justice in which justice is defined as those principles that would be chosen under certain conditions—conditions which do not logically presuppose some particular context of natural assets and liabilities. In other words, the principles by which the major institutions of society function are just if and only if they are such as would be agreed to by individuals in the original position.⁹

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Let us relate this interpretation to genetic control. Clearly, a scheme for genetic control would count as one of the "major institutions" of society, for, as Rawls uses the term, "the major institutions define men's rights and duties and influence their life prospects, what they can expect to be and how well they can hope to do."¹⁰ A scheme for genetic control would, then, be just if and only if it was such as would be agreed to by individuals in the original position. Imagine the following: A group of rational, self-interested persons assembles to choose principles by which to determine the distribution of genes in the human gene pool. Although they have at hand the relevant genetic knowledge to understand the implications of their choices, they lack a very important piece of information. They do not know which of the set of genotypes they establish they will receive when their system is operational. They do not know their self-identity; they could receive any one of the genotypes their chosen system of genetic control creates. Whatever genotype they receive may be said to be just if it was assigned by means of a system of rules that would be agreed to in their original position.

There is, of course, the immediate objection that such a situation could never be actual because the individuals in the original position already possess a genotype. But this is beside the point. The principles derive their validity not from the fact that they are chosen by actual people under test conditions but from the fact that we can demonstrate that they would be chosen by these abstract individuals under a hypothetical condition of fairness.

Now, in such an imaginary situation, what principles for just genetic control would be chosen? We can assume, I believe, that a system of radical equality, one in which identical genotypes were distributed, would not be chosen. Persons in the original position would not choose to be members of a clone. There are two major reasons that would prove decisive. Having the relevant knowledge of genetics, the individuals in the original position would realize that a population with a homogeneity of genotype is likely to have its very survival threatened should certain environmental alterations occur; the gene pool would lack the diversity to be adaptive. Moreover, each of them, as a self-interested being, knows that, whatever its identity, it may have plans and desires and values. Human beings in a diverse population may benefit from one another's strengths (and perhaps weaknesses); those in a homogeneous population will find that all others have the same personal resources (though not the same experience) to offer. The richness that comes through a diversity of natural assets and liabilities will preclude a radically equal genetic assignment.

If a radically strict equality of genes would not be just, that is, would

not be chosen, what arrangement would be? If one agrees with Rawls that individuals in the original position would adopt a maximin strategy, one would say that the genetic distribution selected would be that distribution in which the worst genotype to be assigned was as “good” (as viable, as high on a scale of desirability) as possible. In the spirit of Rawls’s second principle, one would expect that individuals in the original position would opt for a genetic distributional scheme which provided for the greatest diversity of natural assets to the greatest level of excellence and in which any inequality in natural assets could reasonably be expected to work to the benefit of the least advantaged, if indeed there needs to be a “least advantaged.” In the only paragraph Rawls devotes to eugenics in his lengthy work he says the following:

. . . it is not in general to the advantage of the less fortunate to propose talents which reduce the talents of others. Instead, [according to these principles] . . . they view the greater abilities as a social asset to be used for the common advantage. But it is also in the interest of each to have greater natural assets. This enables him to pursue a preferred plan of life. In the original position, then, the parties want to insure for their descendants the best genetic endowment Thus over time a society is to take steps *at least* to preserve the general level of natural abilities and to prevent the diffusion of serious defects. . . . We might conjecture that in the long run, if there is an upper bound on ability, we would eventually reach a society with the greatest equal liberty the members of which enjoy the greatest equal talent.¹¹

I shall close this section on the ideal of justice by making several observations on this application of Rawls’s theory.

1. This proposal for a just genetic distribution turns on a capability of distinguishing genetic defects from genetic assets. The problem involved in making such a distinction is not merely that it involves a value judgment but that a shift in environment can turn a defect into an asset and vice versa. This is, however, a problem for any theory of eugenics, positive or negative, not only for a genetic program compatible with this ideal of justice.

2. Today, we lack a very significant piece of information which is essential to the decision of our hypothetical persons in the original position: We do not know whether the social arrangement of “greatest equal talent” is viable. It might be, for instance, that a society in which each member possessed different talents and abilities—but all to the same maximum level of excellence—is inherently unstable. It might be that some inequalities of natural assets are necessary for social stability. This means that we do not now have the requisite knowledge for establishing a just system of genetic control; we would

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need to know more before we could determine whether genetic inequalities (of genetic assets) were just. Of course, if it turned out that inequalities were necessary, the Rawlsian interpretation would then employ the maximin strategy.

3. It may seem that the application of Rawls's theory of justice presupposes a centralized and uniform system of genetic control. It does not. It says this: However centralized or decentralized, however formal or informal, however voluntary or involuntary, any system for determining the quality of the human gene pool is unjust if it does not yield a distribution of genes that is compatible with the principles chosen in the original position.

4. I have been concerned here only with the justice of the distribution of genetic material. A just genetic distribution obviously does not insure social justice. Its justice could easily be undone by an unjust social arrangement. The preservation of the "greatest equal liberty," the provision of just procedures for settling disputes, and all the other ramifications of the ideal of social justice still have their honored place.

RESPECT FOR HUMAN LIFE

The foregoing attempt to apply the ideal of justice to genetic control will be a vain exercise in the eyes of those who believe that any deliberate alteration of the gene pool violates the more profound ethical ideal of respect for human life. This section is devoted to an application of the ideal of respect for human life to genetic control, so the question of this violation will soon receive attention.

I use the phrase "respect for human life" to designate a cluster of ethical principles, each of which is notoriously vague and beset with difficulties of interpretation but which is considered basic to the moral point of view and of crucial ethical import. Within this cluster, one can find such preferred terms as the "sanctity" or the "dignity" of human life; other formulations label it a "reverence for human life." In some contexts the principle is applied to all life, not just human life. But what all the members of this cluster have in common is this: They express as an ethical ideal the fundamental value of human life, and they prescribe and proscribe certain forms of conduct affecting human life. Daniel Callahan has argued persuasively that this principle of respect for human life, though vague and indeterminate, is not meaningless; its meaning is that of expressing "the ultimate respect we are willing to accord human life."¹² It cannot have the specificity of a rule because it is, as an abstract principle, to serve as a test for proposed moral rules. I shall be using respect for human life as a test for genetic control.

Historically, respect for human life has had three separate focal points: the human species, human families, and individual human beings. Associated with each of these three categories is a complex system of moral rules. I shall characterize briefly each of the three in turn.

First, respect for human life manifests itself as respect for human life taken collectively. Rules which are governed by this aspect of the principle involve the survival and integrity of the human species; they express concern for the human prospect, and they strive to establish and perpetuate the required conditions for a flourishing of the human race. At its heart lies the judgment that it is good that human beings walk the earth.

Second, respect for human life manifests itself as respect for the chief unit of human perpetuation and nurture: the family. Under this category are included those rules which aim at the survival and integrity of family lineages. For example, rules which restrict sexual unions (e.g., rules against incest or adultery), rules granting reproductive rights to families, rules granting parents rights over their children—all of these are guided by this second aspect of respect for human life.

Third, the principle manifests itself as respect for individual human lives. Each human life has immense intrinsic worth; its value is not solely in its contribution to the development of the human species. Under this aspect there are subsystems of rules. Some of them seek to secure the survival and integrity of the body (e.g., prohibitions against murder and rape); others seek to secure respect for the “self,” the intellectual, moral, and emotional personality (e.g., prohibitions against indoctrination and brainwashing, or affirmations of freedom of choice). In concert, all these rules based on respect for persons endeavor to establish a recognition of individual dignity and worth, to create a context of freedom and privacy in which persons may act, and to encourage self-development or personal growth.¹³

Respect for human life, then, may involve respect for the human species, respect for family lines, and respect for persons. To keep all three of these aspects in focus simultaneously is a challenge for the moralist, for the steps he takes in the name of one may prove to undermine the other. Population control is a case in point. If, out of respect for the human species, one advocates a stringent system of population control, it seems that one’s respect for family lines is diminished, for families would no longer retain the prerogative of determining their own size. Conversely, if, to protect the sanctity of the family, one resists any such control over reproduction, one exhibits a flagrant disregard for the future of the human species. The ideal, of

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course, is to maximize the respect shown at all three aspects through a coherent system of mutually supporting moral rules. But it is seldom possible in practice to achieve such an aesthetically pleasing arrangement, and, even when it is, it is likely to be ephemeral.

Surely, proposals for genetic control must be tested against the principle of respect for human life. There is the indubitable fact of the centrality and significance of the principle in traditional ethical theories. But there is also the obvious rationale that it is the peculiar function of this principle of respect to govern our attitudes and actions concerning human life. Since genetic control is a practice that acts upon human life and could well eventuate in the alteration of its forms, the principle of respect for human life is the relevant—indeed, the supremely relevant—principle to bring to bear. And it is probably the ethical principle which we most fear that genetic control will subvert. Let us, therefore, proceed to examine genetic control in the light of this principle under each of its three manifestations.

How does genetic control relate to respect for the human species? Every eugenic proposal of which I am aware has implicitly or explicitly claimed fidelity to this principle; some proposals, moreover, assert that respect for human life imposes upon us a duty to engage in eugenic programs. A rough version of a plausible, current argument is as follows: If we respect the human species, we should take steps to insure its survival and vigor; the human species is now infected with genetic decay, and the prognosis is not pleasant; therefore, steps must be taken to halt the rapid accumulation of “bad” genes in our gene pool. The factual premise in this argument is not easily denied. Our dazzling medical wizardry enables an increasing percentage of persons with genetic defects to reach the point of reproduction—persons who would not, in the “natural order,” even have survived, let alone have reproduced. In addition, our cultural environment, it is claimed, has produced a negative feedback in regard to traits that enrich social life. And, of course, there is the 20 percent of each generation that introduces novel and deleterious mutations. As Paul Ramsey has written, “Thus, by doing away with the natural selection that used to keep us reasonably fit, by holding at bay the lethality of lethal genes, and by weakening the disfavor formerly placed upon bearers of unsociable traits, mankind is allowing an insidious genetic deterioration that will leave us less fit than when we began.”¹⁴ As the genetic load increases, mankind faces the prospect of becoming increasingly dependent on therapeutic drugs and devices to correct for genetic deficiencies; as the spread of antisocial traits disrupts the orderly progress of cultural evolution, we may witness cultural disintegration. This gloomy picture, which seems substantially correct,

could be clarified if more research which linked genotype to particular behavior patterns was available and if we had a more detailed picture of the human gene pool. It is ironic, if understandable, that we have no census, no inventory, of our most important natural resource: the human gene pool. Given the accuracy of this assessment, the argument seems plausible. We must not lay this crisis in our burgeoning "in" basket of crises, for there are clear-cut measures that we can take to halt the decay—measures of negative genetic control.

Many would argue that this does not go far enough. The principle of respect for the human species does not merely exhort us to secure man's survival at his present level of vigor and capacity; it urges us to permit man to flourish, to actualize his potentialities, to become all that it is within us as a species to become. This cannot occur purely at the cultural level, for our genetic structure may need to alter to enable cultural evolution to proceed. Programs in positive eugenics, organized with care and foresight and ringed with appropriate safeguards, are mandated on this view. To do less is to deceive oneself about the depth of respect one has for the human species.

The thrust of these arguments is, then, that genetic control is quite compatible with respect for human life; indeed, it is required by that principle. There is, however, an opposing viewpoint. To respect something is to take an attitude of reverence toward it, to honor and appreciate its normal mode of existence. We do not manipulate or tinker with that which we genuinely respect. We do not bend its mode of existence to our own uses or values. We do not try to remake it along lines we think are best. As Ramsey states, the sort of humanism that urges us to fabricate human beings is not a respect for the human species; it is a suicide of the species, for "the end of both ways of making radical changes in humankind can only be described as the death of the species and its replacement by a species of life deemed more desirable."¹⁵ These "scientific saviors" who offer us salvation from the "genetic apocalypse" by means of genetic control are false prophets and must be repudiated. Those who would replace the mortification of the flesh with the modification of the flesh are afflicted with the deadly combination of a weak imagination and unfettered arrogance. There is much worth pondering and heeding in these sentiments. Historically, it is all too clear that the human race has suffered from the limited imagination and foresight of its members. And, surely, it is part of any ethic of rational belief that we should keep before us the distinct and live possibility that we are wrong. But these considerations, grave as they are, speak to the spirit in which genetic control should be undertaken, to the safeguards it must have. They do not, in my judgment, pierce to the core, which is

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this: If we value a thing, we shall actively strive to preserve it and to create and maintain conditions which conduce to its thriving. This is the ineluctable peril of being a moral animal: To value is more than to be aware of in an approving or gratifying way; it is to commit oneself to action that alters some of the currents of the stream of events—action for which, despite our best, most conscientious efforts, there are no guarantees.

We are confronted with new problems when we relate genetic control to respect for family lines. A prominent moral concern at this level is that genetic control restricts or eliminates the procreative rights of families and places control over reproduction in the hands of outsiders. Some eugenic proposals do not rely on the voluntary compliance of parents, though few have suggested specific punishments for parental violations. It is true, of course, that parents have traditionally held the prerogative of controlling the number and spacing of their offspring—insofar as it was within their power to do so; and, with the dissemination of birth-control information and contraceptive devices, the degree of control parents may exercise has increased. I want, at this point, to make several analytical points about this procreative right.

1. There are two different sorts of rights. For the first sort, to have a right to *X* means that one is free to do *X* and that others are obligated not to interfere. The second sort has been called a “welfare right.”¹⁶ For it, to have a right to do *X* is to obligate others to take the necessary steps that permit engagement in *X*. The right to worship as one pleases is a right of the first sort; it simply restrains others from interference. The right to an education is a right of the second sort; more than guaranteeing noninterference, it requires the state to provide some minimal circumstances that offer the opportunity for learning. Now the procreative right we are discussing has clearly been a right of the first type. It has protected parents from interference in the production of their children. But it has never obligated the state (or others) to provide children for those parents who desire them. Prior to the development of modern reproductive technology, those parents who could not have children by virtue of a physical defect could not exercise their right; they could attempt adoption, of course. My point here is that this procreative right has been restricted by two contingencies: the capability to reproduce and the ability to control reproduction.

2. Natural parents have never had the right to determine the particular child they would produce. It has been beyond the control of the parents to select the genotype of their child; which sperm, if any, will successfully complete its odyssey with fertilization is so unpredict-

able as to be termed “random.” However, by virtue of their own genetic endowments, the natural parents do control the set of genotypes from which each child will emerge. But this set is almost unimaginably large. This fact shows that the amount of control a parent possesses in exercising his procreative right is not very much. We can, in fact, easily imagine a battery of techniques that would give a parent a great deal more control in this matter, some of which are already available—for example, techniques of sex determination, genetic inspection of embryos by amniocentesis, filtering of sperm for certain desired or undesired genetic characteristics.¹⁷ Voluntary programs of these kinds would appear to enhance the procreative right rather than violate it. Consider the following: Suppose, at some future time, we were to adopt a system of genetic control which did not regulate the size of a family or the spacing of the children but did regulate the genetic endowment of the offspring. What procreative right would be lost under such a system? Precisely this: the right of the natural parents to establish the genetic range within which the child shall be endowed. In a sense, it is peculiar to call this a “right” at all since this genetic range is set by no act or choice of the parents; it is simply a biological fact about them, although, in another sense, there is a material loss—the loss of the prerogative to pass one’s own genes on to the future.

3. My final analytic point is that we need no longer mix a discussion of procreative rights with the matter of the ethics of sexuality. Early eugenic proposals inevitably involved the regulation of marriage partners or the control of sexual union. This is no longer necessary, so a substantial ethical problem usually associated with eugenics need not arise. Many would argue that it is inherently immoral to distinguish this sharply between sexuality and procreation. My immediate point is, however, that we are now in a position to make this distinction, a fact which alters the decision context; it takes a special argument today to show that the distinction should not be made.

The foregoing comments do not close the discussion of respect for family lines, but they do clarify the issue somewhat and enable us to move on to a consideration of respect for persons. An extension of the comments on respect for family lines will arise in that context.

The spirit of the respect-for-persons principle is captured in Kant’s famous dictum that we should treat people as ends in themselves and not as means. In a recent explication of this idea, R. S. Downie and Elizabeth Telfer have argued that to show respect for persons is to regard other people as rational, moral agents, to acknowledge their capacities for rule following and for self-determination, to recognize their ability to exhibit principled behavior and responsible choice.¹⁸

This is but one rendering of the ideal, of course, and it is not without its difficulties. For example, there is some uncertainty about whether and why we should respect human beings who are not fully rational, moral agents—children, the profoundly mentally retarded, the comatose, the senile. Whatever interpretation of the principle we adopt, we would probably want to justify this respect on the basis of some quality or status of persons, if not the ones Downie and Telfer choose, then some others. Some have chosen the uniqueness of the individual as a ground for respect: “In all of history, there will never be a being precisely like *this* one.” Quite often this uniqueness is understood to be genetic uniqueness. But the criterion of uniqueness fails on two grounds, perhaps three. The genetic interpretation stalls with the occurrence of identical twins. And besides, everything in the universe is unique in some respect, if only in the space-time path it has taken; surely, we do not wish to grant equal respect to everything. And the real trouble is that uniqueness is not, *per se*, morally relevant; it must be coupled with some other value before it gains ethical weight.

How, exactly, would genetic control violate respect for persons? And what persons would it disrespect?

A plausible response is that it would show disrespect for parents in that it would disregard their procreative rights and thus fail to treat them as rational, moral agents. This response would, in effect, shift our earlier discussion on respect for family lines to the level of respect for persons (*viz.*, the parents). This is, I think, a sound approach, for I confess that nearly every point involving genetic control and respect for family lines appears to me to be a question of respect for the parents as persons. If this is true, the former critical points may be just as easily applied at this level. The particular children parents have are less a matter of rational, responsible choice than it may seem; therefore, the violation is correspondingly diminished.

Perhaps it could be claimed that genetic control treats the unconceived person with disrespect; this would mean that it violates the respect for or sanctity of a particular person to select that person's genetic endowment. This is surely a dubious argument, though, for even if one could make sense of the notion of “disrespecting” a person who does not as yet exist, one must point out that parents have been engaging in something like this disrespectful act all along (though probably it has not been as severe since their techniques are not as determinate in regard to genetic inheritance). I think a much stronger argument would be that it is a violation of respect for persons to “design” a human being for a specific purpose, to select a genetic endowment to serve a determinate instrumentality. Surely, this would be treating persons as means to some end and not as ends

in themselves. On this basis, current proposals to develop clones to serve as a reservoir of spare parts, to develop cyborgs to perform menial tasks, and to breed for such special purposes as space colonization a cadre of mutants would be ruled out. Unethical also would be the tailoring of offspring to suit the fancy of imaginative parents. I am extending the interpretation of respect for persons given earlier in making this argument; I am reiterating that respect for persons involves treating persons (who exist now) with regard for their capacities as fully capable, rational, and moral agents, and in addition I am saying that it also involves acting so as to insure that there will be persons worthy of this respect in the future. (This is materially different from respect for the human species.) This interpretation would give positive guidance to genetic control. It would command that all measures be directed toward the enhancement of each created human being as a rational, moral agent, worthy of respect, having purposes and plans of his own, and not restricted or specialized in his capabilities by his creators.

Before leaving this discussion of respect for human life, I think it is useful to summarize the more important conclusions. (1) Genetic control seems compatible with and perhaps required by respect for human life that is focused on the species. (2) We may ignore the respect-for-family-lines aspect and consider alleged violations of parents' procreative rights under the respect-for-persons aspect. (3) Some approaches to genetic control would violate parents' procreative rights. However, this right is really less substantial than is sometimes implied since natural, biological factors severely limit a parent's ability to determine the genetic makeup of his offspring. (4) Genetic control does not spring from an attitude that is inherently disrespectful. Control can violate respect when it produces beings unworthy of respect, as when it programs persons for specific ends not their own.

SYNTHESIS AND REFLECTIONS ON ETHICAL THEORY

It is now time to piece together the conclusions and implications of the previous two sections in order to reflect upon the larger picture they present. This synthesis will be incomplete and tentative because it represents the application of only two ethical ideals—justice and respect for human life. Were we to apply other ideals we might need to make adjustments in our synthesis.

First, let us look at the negative of the picture. We have rejected as a violation of one or both of the relevant ideals the following: arbitrary discrimination in genetic assignment, radical genetic equality, the genetic design of human beings to serve particular purposes (however noble those purposes), unconcern about the genetic deterioration of

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the species. The problem posed for the geneticist is not how to design the ideal man or woman and therefore how to identify the ideal set of traits; the problem is how to work toward an optimal gene pool arrayed in a just manner. It could be argued that we have ruled out cloning of humans, too, for nearly all of its received justifications are among the above violations.

The positive picture is this: We have envisioned genetic control as a device in the service of the ideals of justice and respect for human life. Genetic control could serve justice by improving the lot of the least advantaged in the distribution of natural assets. It could serve the ideal of respect for human life by enabling the human species to survive in a vigorous and dynamic state and by insuring the continued presence of beings worthy of respect as persons. Underlying this notion is a particular conception of the human community. There is, even from the moral point of view, no single ideal set of natural assets. There is, instead, a claim that we find richness and mutual benefit in diversity; that each person may benefit from the excellences of others; that one's own natural assets cannot receive their full expression without drawing on the talents and experiences of others; that two of the moral ideals that bind individuals into such relationships are justice and respect. There is a most important consequence of this view for the geneticist and the ethicist: We cannot evaluate a single genotype, a single set of natural assets and liabilities, in isolation. The worth and value of a particular set of genes, the load of assets and liabilities it contains, depend upon the genetic endowment of others in the population, upon the social structure and the opportunities and relationships it permits, as well as upon conditions in the natural environment. One's lot in life depends, of course, on conditions in the natural environment; but it also depends on the possibilities of the social order and on the natural assets and liabilities possessed by others living and dead.

The glory of this conception notwithstanding, there are three facts which should exercise a strict control on any attempted application of genetics to humans—at least at present.

1. We lack essential knowledge for the assurance that any modification of the gene pool we make will in fact further the ideals of justice and respect for human life. I have indicated some of these gaps earlier. Of course, we also lack at present many anticipated techniques of genetic control.

2. While genetic control may serve moral ends, it may also serve immoral or amoral ends. No tool has ever been devised that works only in the service of the good; no tool can protect its user from his own folly and ineptness. The more powerful the tool, the greater the

effects of possible misuse, all noble intentions aside. This introduces the problem of how decisions for genetic control are to be made.

3. Most proposals for genetic control involve either an extremely centralized or equally decentralized system of decision making. I am unhappy with the prospect of either. The science-fiction staple of a central board of genetic controllers who enforce some grand design for human population is a horror. I am very reluctant to have a single group of scientists serve as the Invisible Hand which blends the assets of each person into an aesthetically satisfying arrangement. While, admittedly, having a central source of control provides for greater efficiency and consistency of operations, it also increases the effects of mistakes and limited imagination. And it also increases the power available for abuse. On the other hand, I also find the vision of a genetic supermarket to be a horror. Making the gene a new commodity for sale on the open market will hardly produce practices which square with justice and respect for persons. The evils of capitalism aside, I am also concerned about leaving genetic control up to prospective parents. This is the establishment of a right which (as we have seen) parents have never before enjoyed, namely, the right to choose the particular genetic makeup of their child. This new right requires defense. Moreover, with such a decentralized system of decision making, it is almost impossible to guarantee that the resulting decisions will be in the best interests of the human species and faithful to the ideal of justice. And, finally, parents suffer from folly and ineptness as do official boards, though the magnitude of their effects is different. I suspect that some checks-and-balances system would be most judicious, involving a method of filtering (not determining) the decisions made by prospective parents or guardians. (Though the design of such a system is crucial, I must forego the attempt here.)

The final task I have set for this paper is to make some general reflections on the application of ethical theory to genetic control. The foregoing analysis provides a background for such reflections. The following considerations suggest further problems and reveal the incompleteness and openness of the previous conclusions.

My first observation concerns the tension we have seen between the claims of the species and those of individuals. This tension is closely related to that dealt with in political philosophy—the tension between the public good and private rights. I have not resolved this tension in favor of one or the other; nor have I assumed an Invisible Hand that blends each man's interests into harmony with the interests of others. I have, however, argued for this nexus between the two: Fidelity to the principle of respecting persons requires one to act so as to insure that there will continue to be individuals worthy of respect; this is one

(and only one) facet of the principle of respecting the human species. Although there are clearly other aspects to the public good, I have laid claim to no determinate portion of that good except the continuance of individuals who have rights and are worthy of respect.¹⁹

Incidentally, this tension between species and individual is not the only aspect of genetic control that relates it to political philosophy. The questions of centralization versus decentralization of decision making and the application of the ideal of justice display two other areas. Conversely, the issue of genetic control, I suspect, will cause a rethinking of some aspects of political philosophy since (as the study of justice shows) most are based on the "givenness" of the distribution of natural assets and liabilities.

My second observation concerns the relationship between ethics and randomness or arbitrariness. As I mentioned earlier, it poses a special sort of ethical problem when some important area of our lives that was formerly determined arbitrarily or by chance comes within our control. It is a peculiar fact that this problem has reversed itself over the years. To the ancient Greeks, the difficult problem was to deal with the chance events, the arbitrary (they would say, irrational) events, within their ethical scheme. The arbitrary, the disorderly, the chaotic were thought to menace the possibility of rationality. For us, it is a thoroughgoing necessity that threatens rationality. Many of our ethical concepts, and as a result the ethical theories of which they are a part, seem to presuppose a context of givenness. The ethical theories we have developed are intended to give guidance in a world in which many important elements lie beyond the range of human control. (We have seen one example of this regarding justice and the distribution of natural assets.) Such ethical theory (whatever its specific content) may falter when some of these elements become a matter of choice. To use an analogy: Tactical theory assumes a received strategy; it cannot by itself serve as a theory of strategics. Much of contemporary ethical theory might be characterized as a theory of dilemmas, that is, a theory designed to apply to cases in which a given person faces a set of rather well-defined alternatives and must choose one. It is not really an ethic of control, an ethic designed to apply to the creation of alternatives, to the institution of whole practices. Work is needed in this area. And this work will, of necessity, involve the study of the ways in which new possibilities of control transform traditional values and virtues such as charity, justice, and respect.

Third, there is the role of evolution. Although I have looked to certain biological facts at some crucial points in my paper, I do not believe that it is possible to deduce what we (morally) ought to do about genetic control from a theory of evolution. Moral theory is not

contained within evolutionary theory. And there are a number of factors that limit even the ethical usefulness of evolutionary theory: (1) There is the well-known problem that the focus of concern in evolution is the species; the individual is of interest or worth only insofar as he introduces a promising mutation into the gene pool. (2) Moreover, the highest value within evolution is survival; survival, that is, without any qualitative predication. One cannot ask: Survival for what? (3) There is the peculiar problem that evolutionary theory seems unable to give decisive, strategical guidance as choices are being made but instead pronounces on outcomes *ex post facto*. But it is precisely the role of ethical theory to give guidance to decisions in process. To report "X has survived and is, thus, fit" is of little help to X; what X needs is the recommendation "Do this, and you will be fit and hence survive." This set of factors does not argue for a discarding of evolutionary theory; the problem of genetic control can be dealt with morally only in the light of the facts of evolution. Moral arguments have factual premises, and the facts of evolution are likely to be prominent where the conclusion concerns genetic control.

This leads me quickly to my final comment—it is really more of a question than an observation. It has become clear we cannot drive too large a wedge between our facts and our values; if we do, we will never be able to ground our ethical theory on a theory of human nature—and all ethical theory requires such a ground. On the other hand, we cannot fuse and then confuse our facts and our values, for, as Hume pointed out, we can never squeeze an "ought" from an "is." The naturalistic fallacy (roughly, the deduction of normative conclusions from descriptive premises) is very likely to appear in the writings of scientists who, moved by the integrity and force of the facts, may inadvertently take them as a moral guide.

The puzzle I wish to lay before you concerns the interaction of facts and values. It goes as follows:

1. Any ethical theory rests on a theory of human nature, a theory of what man's nature is.
2. To ask what should be done in the practice of genetic control, if anything, is really to ask what human nature ought to be.
3. To ask what man's nature ought to be as a moral question is, in an unusual way, to risk committing the naturalistic fallacy, for it involves one in the attempt to derive what human nature ought to be from the basis of what human nature is.

This argument suggests that there are interesting logical problems in even posing the issue of genetic control as an ethical issue. Obviously,

those ethical theories which rest on a view of human nature as static, fixed, complete, will never be able to accept the genetic alteration of man. It is a foregone conclusion; their judgment can never escape the gravitational pull of their premises. Those ethical theories that rest on a view of human nature as dynamic, open, and moving in a specified way will accept changes that coincide with such movement. It is only for those ethical theories that rest on a view of man as evolving in an indefinite way, as moving in a direction not specifiable in advance, that a certain sort of openness in the consideration of the question becomes possible. (An ethical theory grounded on an evolutionary view of man has a decided advantage on this point.)

An ethic of control is called for—even if its decision is to forego control. Such an ethic will not ignore the facts, nor will it be derived from them. But it will operate in full light of the facts. The facts as we know them are not, perhaps, what we would hope for. But we cannot imagine what ought to be without the restraints of what can be; and what can be is fathered by what is.

NOTES

1. John Rawls, "Two Concepts of Rules," *Philosophical Review* 64 (1955): 3-32. Rawls says that by a "practice" he means "any form of activity specified by a system of rules which defines offices, roles, moves, penalties, defenses, and so on, and which gives the activity its structure," adding that "as examples one may think of games and rituals, trials and parliaments."

2. I shall ignore the technical point that an action may not square with justice and still be the right act from a moral point of view, as, for instance, when one denies the demands of justice and bestows mercy. Though such actions are not, strictly speaking, just, we hesitate to call them unjust. This point does not, of course, diminish the validity and significance of justice as an ethical ideal. On this subject see William K. Frankena, "The Concept of Social Justice," in *Social Justice*, ed. Richard B. Brandt (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1962).

3. There are three distinct areas of justice theory: (1) distributive justice, which concerns the just allocation of things of positive value; (2) retributive justice, which concerns just punishment; and (3) compensatory justice, which concerns just compensation for injury or services rendered. The focus in this paper is on distributive justice.

4. John Rawls, *A Theory of Justice* (Cambridge, Mass.: Harvard University Press, Belknap Press, 1971), p. 102.

5. E.g., one could claim that, although the prevention of an expected genetic defect is not required by justice, it is required by the ideal of beneficence, or by charity, or by kindness, or by special duties stemming from some role such as that of parent.

6. Robert Nozick, *Anarchy, State, and Utopia* (New York: Basic Books, 1974), p. 226.

7. Even the critics of this book have lavished it with praise. E.g., Nozick says: "*A Theory of Justice* is a powerful, deep, subtle, wide-ranging, systematic work in political and moral philosophy which has not seen its like since the writings of John Stuart Mill, if then. It is a fountain of illuminating ideas, integrated together into a lovely whole. Political philosophers now must either work within Rawls' theory or explain why not" (p. 183).

8. I have used the formulation of the first principle given on p. 60 and the formulation of the second principle given on p. 83 in *Theory of Justice*. Rawls's strategy is to reformulate the principles as analysis requires.

9. This is what Rawls terms a "pure procedural" account of justice. Instead of specifying a criterion for just distributions in advance, we specify a fair procedure for determining distributions, and we call the actual results of that procedure, whatever they may be, just.

10. Rawls, *Theory of Justice*, p. 7.

11. *Ibid.*, pp. 107–8; italics added.

12. Daniel Callahan, "The Sanctity of Life," in *Updating Life and Death*, ed. Donald R. Cutler (Boston: Beacon Press, 1968), pp. 181–223.

13. I am indebted to Callahan for this general framework of analysis. However, I have altered his typology and made applications in ways he may not approve. E.g., I have abbreviated the framework considerably by collapsing his five different aspects into the three just described: respect for human species, respect for family lines, respect for persons.

14. Paul Ramsey, *Fabricated Man: The Ethics of Genetic Control* (New Haven, Conn.: Yale University Press, 1970), p. 8. One should not conclude from this quote, however, that Ramsey is a harbinger of genetic control.

15. *Ibid.*, pp. 151–52.

16. This term is used by H. J. McCloskey, "Rights," *Philosophical Quarterly* (April 1965), pp. 115–27.

17. For a state-of-the-art account of the methods of genetic control see Joseph Fletcher, *The Ethics of Genetic Control* (Garden City, N.Y.: Doubleday & Co., Anchor Press, 1974).

18. R. S. Downie and Elizabeth Telfer, *Respect for Persons* (New York: Schocken Books, 1970).

19. There is a parallel formulation. The two distinct types of normative ethical theories are the teleological, which holds that rightness is purely a matter of the good produced by the consequences of an act, and the deontological, which holds that rightness is related to some formal or other property of the act itself. Now the deontologist subverts his principles if he takes action the consequences of which make pursuing a deontological ethic impossible, even if such action was called for by a myopic reading of those principles.