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Genetic Prospects: Finding a Balance between Choice and Acceptance

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Advances within genetics would be of little more than theoretical interest if they did not present the human community with novel choices. The tensions rampant in the genetic arena stem from the nature of these choices, and from a refusal to accept the legitimacy of the underlying medical conditions. Since this situation is made possible by scientific advances, it is sometimes interpreted as demonstrating the inexorable advance of human control into what was once seen as God's domain. If this interpretation is correct, the genetic arena is rightly viewed as the new battleground between science and religion. In order to assess the validity of such an interpretation, genetic advances are considered in a therapeutic context, placing emphasis upon humility rather than hubris. An attempt is made to find a balanced approach to an understanding of genetic knowledge, especially taking into account environmental factors. The necessity of making choices is interpreted from the perspective of ordinary people having to make exceedingly difficult choices for their families. Since many choices in the genetic area involve choosing for or against embryos, the place of embryos within the context of the other parties frequently involved in genetic decision-making is explored.

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The prospects opened up by developments within the genetic arena revolve largely around the extent to which we are prepared to grapple with the choices they present to us. While attention usually focuses on the nature of these choices, the preliminary step of deciding whether choice itself is appropriate is often ignored. Should the prospects opened up by genetic advances be welcomed or should we accept the genes with which we and others are endowed (what is sometimes referred to as the genetic lottery)? This tension between choice and acceptance is multifaceted, and includes within its dimensions a theological component. Should Christians welcome the possibility of genetic choice or is it to be regarded as a challenge to God's overall control?

The question of genetic choice is neither a theoretical one nor a future one. It is a profoundly practical one, so much so that it leads to the fear that science is omnipotent, and that the flow of biomedical technological developments is inexorable. One may even ask whether discussions of ethics, let alone theology, are irrelevant. Has the battle for the human soul already been lost, and are we hurtling toward a posthuman, technologically-driven future, with the propensity to subvert human values by creating separate classes of enhanced and unenhanced human beings.¹

Fears of this ilk dominate many discussions of genetics, leading to the conclusion that genetic choice should be eliminated if we are to avoid a biological Armageddon. Our task should be that of arguing against genetic manipulation, and of maintaining the fabric of the human body in the form in which we know it today. And yet such a stance, if interpreted simplistically, leads to the complementary stance, that of acceptance of whatever genetic conditions emerge.

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The fabric of the human body incorporates genetic variables leading to disastrous disease states that have traditionally been coped with according to the capabilities of the medical knowledge of the day. Are we now to dispense with this tradition by ignoring the prospects opened up by genetic-based approaches?

The crux of this issue lies in the nature of genetic choice itself. If it is regarded as novel, the assumption is being made that this sort of choice only emerged with the rise of modern genetics. I shall argue that it is far from novel since it is embedded within modern medical practice. In arguing my case, I shall trace what I regard as a continuum from medical treatment and genetic control at one end, through to what some interpret as genetic predestination at the other.

A Continuum from the Known to the Unknown

This continuum can be illustrated by tracing its stages from conventional treatment at one end through to the other end with its overtones of science fiction.²

Conventional Medical Practice

Medicine A is found to cure disease A'. It is not known how medicine A works, but it does. The patient recovers from disease A', and no major problems are raised by anyone. Medicine B is effective in controlling and even curing disease B'. The way in which this medicine works is known, and this knowledge is important in determining who will and who will not benefit from its use. Medicine C cures disease C', and in this instance the medicine is genetically-based and acts on a particular gene. The medicine modifies the protein causing the disease, since it acts by targeting this gene.

Though there is a considerable distance scientifically between medicine A and medicine C, the effectiveness of all three medicines means that the outcome for the patient is similar in all three cases. In view of this, it is unlikely that we will encounter any ethical or theological issues. Medicine C with its genetic rationale is no more problematic than medicine B, which in turn is no more problematic than medicine A. The degree of control and the sophistication of the technology have changed markedly in the move from A to C. In parallel with this, the efficiency and the effectiveness of the approaches have also changed. However, the control being exerted, even with C, is far from complete.

It is difficult to see how the integrity of the human person could in any way be threatened by any of these treatment regimes. In each instance, the central consideration is whether the treatment will benefit the patient. If medicine C, the genetically-based medicine, assists the patient, whereas medicine A, the far more traditional and

relatively ineffective approach, does not, use of medicine C is preferable to use of medicine A. Under these circumstances, the role of genetics ethically and theologically is of subsidiary importance.

Sophisticated Genetic Control

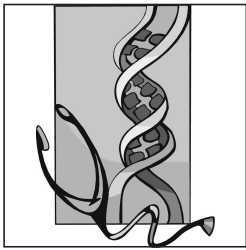
In a future world, it is possible to envisage far more precise forms of genetic control. The first of these introduces us to a patient with Alzheimer's disease (AD), when the protein deposition largely responsible for the symptoms of the disease can be prevented by genetic means. The result is that very early cases of the disease can be prevented from developing further. This would be an excellent example of gene therapy.

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The second hypothetical "patient" is an embryo, which is known to have a (set of) gene responsible for some forms of AD. This embryo has a vastly increased chance of developing AD by the age of sixty years. In this imaginary world, gene therapy has reached a stage where this AD-causing gene can be replaced by a normal gene, without giving rise to deleterious side-effects. As a result, the likelihood that this future individual will suffer from AD can be decreased markedly. In another very similar scenario, genetic manipulation of an embryo could hypothetically be employed to decrease the likelihood of an affected individual developing heart disease at fifty years of age. Both are examples of very sophisticated gene therapy that borders on genetic enhancement.

The third "patient" is also an embryo; the future individual will suffer from mental retardation. Let us imagine that it were to prove possible to genetically manipulate the embryo to produce an individual with "normal" mental abilities. Such an individual would be radically different from early infancy onward, and would truly have been enhanced. The contrast between the unaltered (non-manipulated) and the altered (manipulated) states would be dramatic, in that the two "people" may be practically unrecognizable as potentially the same individual.

These possibilities are not put forward as justification for contemplating moving in any of these directions. All I am contending is that, in the same way as normal brain function is preferable to epileptic fits, or normal eyesight



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is preferable to myopia or glaucoma, we should not dismiss out-of-hand means (including genetic means) of remedying major defects.

Genetic Foreknowledge

In an even more futuristic setting, it is possible to envisage a world where the genetic make-up of individuals is totally known and, hence, is open to being analyzed by others. Genetic “chips” are available, and these could be used to read out our individual genetic make-up. Theoretically, everything that could be known about us genetically is open to scrutiny. Information is available about the functioning of our kidneys or brain, the chances of our manifesting a whole range of cancers or heart disease, and even our ability to cope with stress, or our proneness to depression. This is where the human genome project may lead, presenting as it does enticing therapeutic vistas, or alternatively, dire predictions of abusive control and a loss of human freedom. Of those two paths, it is the negative one that is so often highlighted.

Genetic knowledge of this order could enhance people’s understanding of themselves and their world. For instance, instead of having to think vaguely about, say, cholesterol levels, which may or may not have the significance attributed to them for particular individuals, people would theoretically have a far more precise means of knowing whether these levels should be taken seriously in individual cases. Whether people could cope with such detailed information is another matter, since the medicalization of life may become overbearing.

However, even in a world characterized by this level of genetic foreknowledge, there would still be an intimate connection between people’s genes and the numerous environmental factors to have influenced genetic expression since the first few days of embryonic existence. A strong predisposition to develop stomach cancer is affected by dietary, neuroendocrine, external environmental, and attitudinal factors. It is a person, and not a set of genes, who develops stomach cancer. In other words, even in some future world of genetic foreknowledge, the crucial context will still be that of people in their wholeness, and not genes in some aseptic, depersonalized cellular compartments.

Nevertheless, this discussion raises an even more fundamental notion, namely, that we can be “known” biologically (“known” genetically). For some, this is the ultimate in genetic determinism. This is an unfortunate conclusion, because the accuracy of the predictions will depend on factors additional to, and interacting with, the genetic. Just as genes contribute to what we are as people, the persons we have become influence the expression of our genes. Consequently, determinism is far less of a threat than once supposed, and reductionism should be regarded solely as a methodological tool.

Coming to Terms with Genetic Analysis

Reflection on these scenarios highlights a number of interrelated principles.³

- The context of these illustrations is that of medical treatment, and this will continue to be the dominant context in most situations. The significance of this context is that it serves to control and limit scientific bravado. While it does not provide an infallible framework, it differs significantly from that in which the ultimate goal is the creation of a race of supermen and superwomen. This is the contrast between therapy and hubris, and it serves as a reminder that genetic ventures occur in both contexts and not solely in the latter.
- A therapeutic context is a reminder that the welfare of individuals is paramount. If ever this is lost, a framework for person-centered decision-making is also lost. At a broader level, community-centered decision-making is crucial. In other words, these contexts are reminders that genetic therapy and modification are to be used to serve and assist people in need. To ignore the welfare of the needy and downcast, and use genetic interventions to serve the aspirations of those wanting perfect children or idealized offspring, is to misconstrue the science and misappropriate a therapeutic context.
- A continuum exists from unremarkable therapy through to startling new vistas: from genetic-based medicines, to the ability to determine individuals’ future characteristics, and ultimately to the precision of an all-embracing genetic knowledge of our biological essence. Failure to acknowl-

edge this continuum in order to concentrate solely on the power to manipulate people is deeply troubling. Those who are fearful will oppose all forms of genetic science; those who are filled with bravado will seek to use the power of genetic science for self-aggrandizement. Recognition of the continuum provides a productive middle way.

- Science is not omnipotent; and even the degree of understanding and control I have hypothesized is unrealistic. All human control and all human expertise are severely limited, limitations that stem from both a mixture of human finiteness and human sinfulness. It would be a tragedy if our assessment of genetic science became warped by false illusions of scientific power. A backlash against such arrogance could lead to rejection of any use of genetics therapeutically. This, in turn, may cause us to turn our backs on abilities made available to us by God.
- Genetics in isolation provides a limited understanding of what constitutes the human person. It has to be seen alongside the environment within which individuals develop and function. It is this interaction between genetic and environmental factors that is basic to everything we are as people. This in no way invalidates the significance of genetics, but it does serve to place it within a broader biological context.
- The human person is always susceptible to manipulation, behaviorally, politically, pharmacologically and, in rare instances, genetically. There is no escape from this, because relationships with others are central to human existence, and these demonstrate the ease with which we abuse and exploit others for base ends. This emphasis on relationships stems from what we are as persons made in the image of a triune God. Relationships are central to the functioning of the godhead, and to every facet of human existence—biologically as well as spiritually.

From Hubris to Humility

The world of genetics can be intensely misleading, since it lends itself to oversimplification. Images of “designer babies,” the rampant cloning of famous and infamous individuals, and the engineering of our very essence through outlandish genetic manipulation serve to mislead theologically as well as scientifically. So does talk of techno-eugenics, the segregation of what some writers refer to as “GenRich” individuals from mere “Naturals,” re-designing the human species, the emergence of genism, and the creation of posthumans.⁴ Such images fire the imagination, but do nothing for serious debate and analysis.

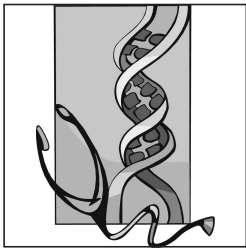
Discussion of topics like choosing our children’s genes tends to revolve around choosing genes for fair hair, blue eyes, intelligence, physique, good looks, avoiding baldness, or whatever. The ephemeral nature of these longings

only serves to demonstrate their superficiality, let alone the scientific precision, clinical complexities, and expensive resources that would be required to achieve them. Unfortunately, instead of demythologizing such fantasies as empty claims, they are taken seriously and are used to construct tirades against realistic and therapeutically based genetic choice. The latter can then be dismissed on the ground that its goal is that of producing perfect babies, designed to order. These twin themes of perfectibility and designer babies carry powerful negative theological overtones, with their message that science is assuming redemptive powers; salvation can be found in biological manipulation, and the hope of a better life emanates from genetic intervention.⁵

The Christian task should be that of debunking [the twin themes of perfectibility and designer babies, with their message that science is assuming redemptive powers], and not use it to frighten and mislead the faithful.

Christians rightly reject any such paradigms grounded in such quasi-scientific aspirations.⁶ The trouble is that these paradigms are based on little more than irresponsible journalistic hype (sometimes aided and abetted by scientists who should know better). The Christian task should be that of debunking this fatuous mythology, and not use it to frighten and mislead the faithful. To use it as the foundation on which to construct a case against genetic intervention in the name of Christ, is to fall into the same trap as those who look for a biological version of the new heavens and new earth. While the intentions of these two groups are radically different, they both accept the hubris implicit within a scientific vision that assumes that nothing lies outside its manipulatory abilities. Whether these are welcomed or rejected, they are real.

Starting from a baseline like this, any assessment (Christian or otherwise) of the prospects opened up by genetic intervention will be mired in opposition to them. The rationale of this opposition is rejection of hubris rather than an analysis of the prospects opened up by serious genetic science. Neither does it stem, of necessity, from the application of biblical principles, even acknowledging the problems encountered in their interpretation in a contemporary area like this one.



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The emphasis I wish to make is that the rejection of hubris (valid as it may be as a general principle) should not be the Christian's starting point. Far more relevant in this context is the embrace of humility—to enable a rigorous assessment of the merits of what can and cannot be accomplished by genetic science. Using the therapeutic framework I have previously advocated, our eyes then can be directed toward what can be realistically accomplished to benefit the patient.

The good of the patient becomes the guiding principle; embedded within this is a commitment to improve the quality of the patient's life or to replace illness by health. This is a positive hope, but it is also a realistic one. The genetic intervention may not work; our hopes may be dashed. But the attempt is to be encouraged as long as our expectations are guided by realistic clinical and scientific goals. There is no hint here of perfection or of ageless existence in a disease-free body. The dominant value is that of humility, demonstrated by caring for those in need, and of utilizing powerful technologies in the service of those potentially capable of benefitting from them.⁷ While it has to be acknowledged that the dividing line between therapy and enhancement is both unclear and shifting, an emphasis upon the good of the person helps to keep the focus on what is largely a therapeutic agenda.

Finding a Balance for Genetics

At a somewhat less journalistic level, reference is repeatedly made to gay genes,⁸ IQ genes,⁹ genes for aggression,¹⁰ and even smart mice. Regardless of which gene one is allegedly interested in, the basic message is the same—there are genes that cause us to act in certain ways. The underlying assumption is that there is a direct correlation between genes and disease, genes and behavior, or even genes and belief. It may even be that we can choose genes for our children, rendering them intelligent, bright, beautiful, and possibly even virtuous. The hope appears to be that we could ensure that they turned out to be compliant to our wishes, becoming entrepreneurs, scientists, or accountants, or excelling in chess, football or ballet. Perhaps we could increase the likelihood that they follow Christ. Take your pick; all that is required is that you choose the appropriate genes!

These are disturbing possibilities, since they undermine central elements within our responsibility as human beings. If, say, I have no choice but to be aggressive, I am unable to respond to the call of Christ to be a peacemaker and to love my neighbor as myself. It may even be that the fruits of the Spirit cannot manifest themselves in my life, not because I am being unfaithful, but because I am genetically inclined to be jealous, angry, and selfish. And what if my Christian journey amounted to nothing more than a genetic or neural predisposition?

These are unsettling vistas, since they presuppose that all we stand for can be explained in genetic terms, which is usually interpreted as explaining away everything we stand for. The mere description of a personal characteristic in scientific (whether genetic or neural) terms is taken as invalidating that characteristic. This, however, fails to understand the relationship between any complex human/personal characteristic and the genetic basis for some aspects of that characteristic.

The link between individual genes and behavior is far more complex than suggested by the "gene for X" scenario. This is because multiple interacting genetic factors usually contribute to a trait. Besides this, environmental factors are also of major relevance, with genetic and environmental factors interacting in a complex manner. Interestingly, genes are switched on and off in response to a variety of pressures, both during development and later on in cell life, while the proteins produced by genes may be subsequently modified themselves.¹¹

Consequently, a gene, or even set of genes, acting in isolation will rarely be the only cause of a particular condition. The pathway between a gene, a particular protein, and an individual scoring highly on an IQ test or having an aggressive personality, is very indirect. This is not to say that genes have no influence on behavior—they do, but concentration on genes to the exclusion of other factors grossly oversimplifies the human condition. The complexity of what we are as human beings is rivaled only by the complexity of our genetic (and environmental) make-up.¹²

The world of behavioral genetics points clearly to the conclusion that aspects of our

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character and personal identity have a genetic basis. This is not surprising, since our bodies are integral to who we are as people. Genetic factors are inevitably involved, even at the deepest (some would say the most sacred) levels of what makes us the people we are. But this in no way threatens the conception of a person as a rational being, capable of taking responsibility for ourselves as free agents. Neither does it detract from our ability to act as God's agents and stewards in his created order.

It is unwise to attempt to see genes as isolated units. The relationship between them and a diversity of environmental influences is an intimately interlocked one.

We acknowledge that human beings have a limited freedom, one constrained by our biological and environmental circumstances and also by our genetic make-up. We are not perfectly free, but have we ever thought we are? Through this self-understanding we can begin to appreciate our moral and spiritual limits, as well as our addictions and predispositions. We may also begin to see how God's grace can renew what we are as people, including possibly the ways in which genes are expressed in our body systems.¹³

We are "of the earth," and we recognize that God himself was incarnated to become one with us: to become flesh, with (among many other things) its genetic building blocks. These building blocks, however, are far from unalterable, since the environment affects everything to which they give rise. Surprisingly, this includes the micro-environment at the level of cells and tissues, as well as the far more obvious external influences. Hence, it is unwise to attempt to see genes as isolated units. The relationship between them and a diversity of environmental influences is an intimately interlocked one.

What this means is that genes are chosen indirectly as well as directly. Advertently or inadvertently, they may be modified by the nature of the environment in which children grow up and function. People and their bodies do not exist in a social vacuum. A vast range of genetic and social factors will always exist alongside one another. Compare the quality of life of the following: (1) those with potentially excellent health but living in a malnourished

community where their efforts are devoted to mere survival; (2) those brought up in abusive homes and characterized by behavioral problems as adults; (3) those with cystic fibrosis or some other equally debilitating condition but brought up in loving and supportive homes and communities; and (4) in the future, those brought into the world by cloning or following genetic modification of some description but raised in a loving environment where they are cherished for all they represent as individuals in their own right.¹⁴

These illustrations point to different forms of control—social in (1) and (2), and biological in (3) and (4). The outcomes are not inevitable and depend as much upon social pressures as biological (including genetic) ones. What is of crucial significance is the ability to be oneself and to relate productively to others within the human community. Relationships such as these emanate from our personhood, as those made in the image of God. The manner in which humans are treated should always be viewed within the broader context provided by human relationships, and never simply within the much narrower framework of biological parameters. Any choices we make should be choices to benefit people, and not simply to enhance disconnected building blocks, whether genes, livers, or brains. The latter acquire importance when viewed as contributing to the relatedness and wholeness of individuals as persons.

Underlying the position I am outlining is a *person-centered model*, over against a reductionist machine-centered model. We make choices for ourselves and on behalf of others, because people have to make choices. Some of these choices will not raise any genetic or technological issues, and do not generally elicit vigorous ethical debate. Others will, such as when genetic choices are made at the earliest stages of children's existence—probably when they are or were embryos. The thrust of my argument is that nongenetic and genetic choices should be viewed within a unitary framework.

But Should We Be Choosing at All?

From a Christian standpoint we are made in God's image, and so are to function like God. No matter how much our God-likeness has been shattered by sin and rebellion against God, we are still images of our maker, albeit tarnished images. As such we demonstrate a great deal of his creativity and his inquisitiveness. From this it follows that we are to exercise responsible control over the created order. Scientists are functioning as God's images, probing and thrusting into the created world, attempting to understand it, and then re-direct it as his stewards. Within the medical sphere, the desire is to exercise at least limited control over evil in the form of disease that would ravish and destroy all that is beautiful and worthy in God's world.¹⁵



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This, of course, is just one side of the picture. The other side is that scientists may be arrogant and unworthy, with motives of self-aggrandizement and personal glory. It is fear of such motives that leads to condemnation of science and its agendas. The picture so often painted is of scientists setting out to create some new creature with superlative powers. Unlikely and unhelpful as these pictures are, they equate scientists with playing the devil (and not God), since any venture of this nature would stem from human conceit regarding the unbounded power of human resources.

But who is doing the choosing? Think of a couple with cystic fibrosis in the family.¹⁶ These two young people have to make agonizing choices. These are ordinary people, without any sophisticated scientific or theological knowledge, having to determine the fate of embryos and children who will one day become adults. The situation facing them is not of their own making; they would never have elected to have to cope with a debilitating and tragic disease like cystic fibrosis. They have no control over the gene underlying this condition. The decisions they make have nothing to do with heroics or hubris. They are trying to sort out the dimensions of their family life in the midst of burdens and tears.

This couple has been told about the availability of pre-implantation genetic diagnosis (PGD). If this procedure shows that an embryo does not have any indication of cystic fibrosis, it will be transferred to the wife's uterus in the normal way. On the other hand, if the tests are positive, the embryo will be discarded and the same procedure will be carried out on a second embryo, and so on. The couple has to decide between the respective values of a four- or eight-cell embryo and a child. Any decision they make will have profound implications for at least one future individual, and even for those who will never develop beyond being very early embryos. It is their family and their children that are at stake. But they have no choice, since for them there is no escape from the reality of cystic fibrosis, and its devastating effects on any children they bring into existence.

This young couple has to exercise responsibility, but this is what being human is all

about. We cannot claim that we are made in the image of God, and then walk away from what that means—exercising responsibility, attempting to improve the world for ourselves and others, understanding as much as we can, and controlling what can be controlled.¹⁷

Let me make it quite clear, this couple does not have to go in a technological direction. They do not have to choose against any embryos or future individuals with cystic fibrosis. But, no matter what their views of the embryo, whether conservative or liberal or somewhere in between, they do have to choose, and they do have to live with the repercussions and consequences of their choices. These could include children with cystic fibrosis, children without cystic fibrosis, and embryos or fetuses that will never live as children suffering from cystic fibrosis. They can never escape from one or the other of these, because they are relational creatures. The precise direction they take will depend upon numerous factors—spiritual, the extent of family or church support, and the health care systems within society.

As we reflect on this couple with cystic fibrosis, we begin to see human embryos within the broader context of a family in peril. If the couple consents to any of their embryos being destroyed, it is because these particular embryos carry a gene that will result in children with cystic fibrosis. Either way, they are confronted by an agonizing moral choice—whether to dispose of the embryos or implant them in the wife's uterus knowing that a resulting child will suffer from a debilitating disease. The easy, and possibly morally preferable way out of this dilemma, is via ignorance; they are unaware of the options and can do nothing about them. They are shielded from making a difficult, and possibly invidious, decision; they will have to take what comes. This is precisely the position in which we repeatedly find ourselves, and yet we usually regard this as a position of weakness rather than of strength. Ignorance is not a virtue when confronted by malaria, tuberculosis, or dysentery, or by measles or smallpox, about which something can be done. In these instances, knowledge is preferable to ignorance, though in the earlier part of the twentieth century ignorance reigned supreme.

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If we decide to opt for knowledge over ignorance, a choice between human embryos and the health status of future children has to be made in cases such as this one. At a more general level, research on human embryos raises similar issues, where the anticipated outcome of the research, albeit some distance into the future, is improvement of human health. The general thrust of acting as God's stewards comes into play here as well. There are two possible courses of action, both of which have problematic elements. This is where Christians (as well as others within the community) reach different conclusions, since specific biblical teaching is unavailable. A common approach is to seek a definitive answer to the question of when human life (personhood) begins. However, as the case of cystic fibrosis illustrates, the ethical dilemma emerges out of the choice that has to be made—between the interests of early embryos and that of children and adults who will have a potentially serious medical condition. To greater or lesser degrees this will always be the choice.

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Simple solutions will probably by-pass this choice, since they will concentrate on one party or one interest, out of all those directly or indirectly affected. In order to do justice to a range of theological motifs, a number of guiding principles will have to be consulted and balanced. These will not provide definitive answers, but they will hopefully enable us to construct a helpful forum within which to debate the respective merits of contending forces.

The *first motif* is provided by the urge to restore the material world: to improve it, care for it, and cure those with distressing conditions. Inevitably, our attention is on human beings in need of medical help and assistance. If there are current or imminent scientific measures that might realistically be able to alleviate serious illnesses under normal circumstances, they should be pursued. This should be within the bounds of a balanced life-style and broad overall interests. It is from this foundational

principle that we should turn to examine the specific issues emanating from the way in which we treat human embryos.

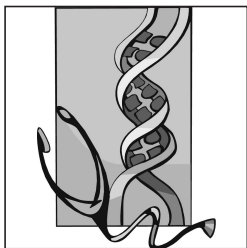
This introduces the *second motif*, which confronts us with the question of whether some of these conditions can best be tackled at the embryonic stage or later on in fetal or more likely in postnatal life. In searching for an answer here, we will be guided by the scientific and clinical evidence. Both stages may be relevant, and both should be amenable to further consideration. At any particular time, one may be preferable to the other on account of the level of clinical understanding and/or moral preferences.

In moving in the embryonic direction, a *third consideration* becomes relevant. Might the destruction of human life, even at its very earliest stages, lead to an objectification of human life? Any destruction of human life, or any use of human tissue following a tragedy, should prompt this consideration. Awareness that human powers can be used in manipulatory ways should instill caution into our grand ventures. After all, human dignity is readily sacrificed in the pursuit of meager ends. And yet, there is a balancing perspective. The other participants in therapeutic decision-making are also human beings, and neglecting what could be done to assist them may threaten aspects of their dignity. They may be held hostage, by unduly elevating rudimentary human life in the form of the earliest stages of human development. No one direction is self-evidently more appropriate either theologically or ethically, without working through the issues in each individual situation. Judgment and discernment are mandatory.

For Christians there is also a *fourth motif*, namely, one's dependence upon God. While this as a global principle will not immediately answer the sort of very specific questions raised in this discussion, it is the fundamental relationship that is the bedrock for all considerations such as these. The couple with cystic fibrosis in their family should be guided in all their decisions by their dependence upon God. This will help them come to terms with the agonies and trauma of the ambivalence implicit within their moral decision-making. Where there are no "correct" answers, there are answers that demonstrate faithfulness to one's relationship to God and one's position within a community of the Lord's people.

Some Questions and an Assertion

As science encroaches increasingly on realms that once lay outside human control, one has to ask whether the sphere of God's control is being eroded. In other words, do we wish to confine God's domain to areas of life where there is little, if any, human control? Indeed, is there an inverse relationship between divine and human control? Ques-



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Genetic Prospects: Finding a Balance between Choice and Acceptance

Since God is sovereign over all, he is sovereign over the genetic realm, just as he is over human life, human community, and the ecosphere. Divine grace and creativity are evident in all these realms, and human creativity is to follow suit.

tions of this ilk are especially poignant in the genetic area since genetic modification appears to have creative overtones. If we argue that the mandate to act as good stewards of God's creation is a limited mandate, in that it excludes the genetic realm, it behooves us to establish what those God-ordained limits are.

In the face of these possibilities, the position I have arrived at is that, since God is sovereign over all, he is sovereign over the genetic realm, just as he is over human life, human community, and the ecosphere. Divine grace and creativity are evident in all these realms, and human creativity is to follow suit. If we can say that God works through creation and, therefore, through what we describe as the natural world, there is no reason to say that he does not also work through the basic processes described by biology and, therefore, through genetic mechanisms.¹⁸ If this is true, we can go on to say that genetic modification brought about by humans has the potential for extending the work of God. This, too, has its dangers and its pitfalls, since appallingly injudicious choices can be made. However, if we refuse to go down this path, we will end with the appalling paradox of confining God's activity to an ever-shrinking and ever-decreasing realm of ever-increasing irrelevance. ♦

Notes

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- ⁴G. Stock, *Choosing Our Children's Genes: Redesigning Humans* (London: Profile Books, 2002); L. M. Silver, *Remaking Eden: Cloning, Genetic Engineering and the Future of Humankind?* (London: Phoenix, 1999); Center for Genetics and Society, *The Threshold Challenge of the New Human Genetic Technologies* (www.genetics-and-society.org/overview/threshold.html, 2002); and G. J. Annas, *Genism, Racism, and the Prospect of Genetic Genocide* (South Africa: UNESCO 21st Century Talks, 2001).
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¹¹Nuffield Council on Bioethics, *Genetics and Human Behaviour* (London: Nuffield Council on Bioethics, 2002).

¹²D. G. Jones, "A Neurobiological Portrait of the Human Person: Finding a Context for Approaching the Brain," in J. Green ed., *What About the Soul? Neuroscience and Christian Anthropology* (Nashville, TN: Abingdon Press, 2004), 31–46.

¹³R. Cole-Turner, "Soma, Psyche, Sin, and Salvation: Exploring the Relationship between Genetics and Theology," in Chan and Chia, eds., *Beyond Determinism and Reductionism*, 95–107.

¹⁴D. G. Jones, "Biomedical Manipulation: Arguing the Case for a Cautiously Optimistic Stance," *Perspectives on Science and Christian Faith* 54 (2002): 93–102.

¹⁵D. G. Jones, *Valuing People: Human Value in a World of Medical Technology* (Carlisle: Paternoster Press, 1999).

¹⁶Ibid.

¹⁷Ibid.

¹⁸Cole-Turner, *The New Genesis*.

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