

## BIOLOGY AND THE FUTURE: A DOCTRINAL AGENDA

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**T**HE FOLLOWING ARTICLE is a proposed agenda, not a developed theological treatise. It is concerned exclusively with work to be done, not with work already accomplished. It is an attempt to establish a context, to present a beginning to a doctrinal conversation that will occupy the Church for a long time. It should therefore be read as an attempt to look at a whole set of contemporary issues which have received little serious doctrinal attention so far. It contains no special insights into specific issues; it concentrates primarily on raising initial questions which, I hope, will lead to more appropriately stated questions. As a physics professor of mine used to state, "You will not get the correct answer until you have asked the correct question." This is an approach to the questions proper to, it seems, the most significant theological opportunity and challenge of the 21st century.

### INTRODUCTION

There is always a chance of distortion in any attempt to describe very briefly great sweeps of history. Nonetheless, it can be said that the great doctrinal controversies of the fourth and fifth centuries (and the development of doctrine which grew from them) were essentially concerned with the nature of God. The doctrinal conflicts of the 16th century centered on sacrament and the nature of the Church. In our day the major doctrinal issues concern the nature of the human.

Almost 30 years ago John Courtney Murray wrote: "The Basic Question that modernity has come to ask is, of course, what is man? From this question all the others proliferate; to it, in one way or another, they all return."<sup>1</sup> After a very long paragraph listing the questions involved in this "Basic Question," Murray continued:

All these questions, and others related to them, concern the essentials of human existence. Through all of them runs the continuous thread of modernity's basic question, what is man? The multiplicity of answers to all these questions, and the multiple ways of refusing the questions themselves, are in general what we

<sup>1</sup> John Courtney Murray, S.J., *We Hold These Truths* (Garden City, N.Y.: Image Books, 1964) 127.

mean by the religious pluralism of the modern age. Integral to the pluralism is the skeptic or agnostic view that it is useless or illegitimate even to ask Ultimate Questions.<sup>2</sup>

Murray later states:

First, the Basic Issues of our time concern the spiritual substance of a free society, as it has historically derived from the central Christian concept, *res sacra homo*, man is sacredness (only the abstract noun can render the Latin rightly). Second, the Basic Issues concern the fundamental structure of a free society. I do not mean its legal structure as constitutionally established. . . . I mean rather the ontological structure of society, of which the constitutional order should be only the reflection. This underlying social structure is a matter of theory, that is, it is to be conceived in terms of a theorem with regard to the relation between the sacredness inherent in man and the manifold secularities amid which human life is lived.

This twofold formulation is very general. I set it down thus to make clear my conviction that the Basic Issues today can only be conceived in metaphysical and theological terms. They are issues of truth. They concern the nature and structure of reality itself—meaning by reality the order of nature as accessible to human reason, and the economy of salvation as disclosed by the Christian revelation.<sup>3</sup>

Vatican II a few years later used the same accents:

Nonetheless, in the face of modern developments there is a growing body of men who are asking the most fundamental of all questions or are glimpsing them with a keener insight: What is man? What is the meaning of suffering, evil, death, which have not been eliminated by all this progress? What is the purpose of these achievements, purchased at so high a price? What can man contribute to society? What can he expect from it? What happens after this earthly life is ended?<sup>4</sup>

The doctrinal agenda proposed by Murray and later by Vatican II has been specified and deepened over the last two decades by many events and factors, not the least of which is the startling advance in the biological sciences and technologies. Pope John Paul II has stated in a recent major letter on faith and science:

The matter is urgent. Contemporary developments in science challenge theology far more deeply than did the introduction of Aristotle into Western Europe in the thirteenth century. Yet these developments also offer theology a potentially

<sup>2</sup> Ibid. 128.

<sup>3</sup> Ibid. 193.

<sup>4</sup> *Gaudium et spes*, no. 10; tr. from *Vatican Council II: The Conciliar and Post Conciliar Documents*, ed. Austin Flannery, O.P. (Northport, N.Y.: Costello, 1984) 910.

important resource. Just as Aristotelian philosophy, through the ministry of such great scholars as St. Thomas Aquinas, ultimately came to shape some of the most profound expressions of theological doctrine, so can we not hope that the sciences of today, along with all forms of human knowing, may invigorate and inform those parts of the theological enterprise that bear on the relation of nature, humanity and God?<sup>5</sup>

It is my conviction that all the major issues agitating the Church today (from *in vitro* fertilization to women's ordination) revolve about the meaning of our bodiedness. This clearly includes all questions which relate to our sexual being as well as those regarding the nature of the Church as the Body and Bride of Christ. Perhaps most pregnant of the future are the scientifically and technologically based issues surrounding our being bodied. I intend to treat *only* these last in this article.

#### CONTEXT

The sweep of advance in the biological sciences, the biotechnologies, and even bioindustry has been and is astounding. The sweep extends from theory to practical ways to change living systems predictably and reproducibly. It also includes questions of human origins (for example, molecular biologists talk about "mitochondrial Eve"<sup>6</sup>) and issues about the human future. We can in principle propagate the human species apart from sexual activity through *in vitro* fertilization. We hear of unbounded possibilities in genetic therapy and in what we might call "genetic enhancement." New scanning equipment and procedures (the CAT scanner, the PET scanner, and nuclear magnetic resonance techniques) are beginning to allow scientists to probe the activities of single

<sup>5</sup> "Message of His Holiness Pope John Paul II," in *Physics, Philosophy, and Theology: A Common Quest for Understanding*, ed. Robert J. Russell et al. (Vatican City State: Vatican Observatory, 1982) M12.

<sup>6</sup> "Mitochondrial Eve" is a nickname some geneticists have given to a hypothetical "dark-haired, black-skinned woman who lived in the savannahs of southern Africa" approximately 150,000 to 200,000 years ago, from whom all modern humans (*homo sapiens sapiens*) are descended. Some molecular geneticists have worked with the DNA found in the mitochondrion of cells from 147 placentae of women with ancestors from Africa, Europe, the Middle East, and Asia and from aboriginal women in New Guinea and Australia. The DNA in the mitochondrion is passed from generation to generation *only* in the female line. The male contributes genetic information only to the DNA in the nucleus of the cell, not to the mitochondrial DNA. The scientific results suggest that there is one point of origin for all modern humans: a woman dubbed "mitochondrial Eve." If shown to be true, this theory, of course, would lay to rest arguments of monogenism vs. polygenism, while raising other very intriguing doctrinal questions. Where, e.g., would the Neanderthals (who do not share this same mitochondrial DNA and hence are not from the "same stock" as Jesus) fit in the history of salvation? That is a curious state of doctrinal affairs, to be sure. It is worth noting that we can expect the scientific debate over these results to go on for some time.

neurons in the brain. We can scarcely imagine the possibilities to be opened up when neurochemistry and genetics come together. For a historical (bodied) religion like Christianity this advance in knowledge of living systems and a growing ability to manipulate them will have a staggering impact. We have both the opportunity and the need for a major doctrinal development "on the body."

We have gained and are gaining an unbelievable amount of information about living systems in general, human beings in particular, and the interactions among all living systems. This information and its meaning in creation and salvation will help us penetrate more deeply into the mystery of God, into sacramentality and covenantal event. Our generation is privileged to stand at the threshold of a far deeper appreciation of what God has wrought. I shall not go through a long litany of what is happening in the biological sciences. This information is available in many places. I intend to present a brief treatment of what I perceive to be the meaning of what is happening as well as my understanding of its implications for Catholic belief.

The spurt in the biological sciences since World War II—what is really now the "physics of living systems"—represents as great a challenge as Christianity has ever faced. That is a large statement indeed, but one I hope to clarify in this treatment. Suffice it to say here that much of the proposed use of biological knowledge is utopian, with, however, the new note of being achievable, at least to a large extent. Equally challenging is the social context within which these new powers are being born. It is one of utilitarian individualism, whose emblem is the right of privacy, the "philosophy" that endows the idiosyncratic with a normative character. Privacy has become the secular expression of freedom. This aspect of the context of the biological future, which will be considered briefly later, needs urgent consideration.

#### ISSUES

When Christians proclaim the Creed, they profess their faith in the resurrection of the body. This can be seen in almost all of the earliest creeds. Belief in the body's resurrection is proclaimed not in the words *anastasin nekrôn* of the Creed of Constantinople but in the words *anastasin sarkos* of the earlier creeds.

St. Paul says in Romans 8 that we who possess the first fruits of the Spirit groan inwardly as we wait for our bodies to be set free. He does not say that we are waiting to be set free from our bodies. In Phil 3:21 he returns to the same theme, stating that the Lord Jesus Christ will transfigure these wretched bodies of ours into copies of his glorious body.

As early as Irenaeus,<sup>7</sup> late in the second century, it is clearly stated that the flesh is good, being prepared now in the Eucharist for the incorruption of everlasting life. For two thousand years the singular newness of the Good News has been the resurrection of the flesh. It is not strange that the Church does not have a sufficient structured doctrine *de corpore* to cope with the revolutionary developments in the biological sciences and technologies. Such a doctrine would have been useless before the questions were asked. It is, however, unfortunate that the questions should now appear to be so unusual and so difficult to formulate theologically.

Twenty-five years ago, when this author was studying theology, the concept of "bodily integrity" was broached only (if my memory is accurate) in discussing mutilation, which involved such issues as surgical amputation and deliberate maiming, and in questions about the state of Adam's body before sin. This latter was hardly an issue crying out for contemporary treatment. The central moral issue of bodily integrity was how much one might *take away* from the human body and still have a human body. Of course, these were concerns before organ transplants, recombinant DNA, the new reproductive technologies, and the developing neurotechnologies, before organs and fetal tissue became marketable commodities. That today's questions about bodily integrity revolve more about how much can be *added* to the human body without disturbing its human character shows how much the theological times have changed.

A consideration of the sweep of technological activity over the last several centuries illumines the revolutionary importance of the biological technologies both for society in general and for the Church in particular. The older technologies, i.e. those which grew out of physics and chemistry, looked primarily to changes in the environment external to human beings for the *betterment* of human living. Here, e.g., we might include the technologies that promoted urbanization, travel, and expanded communications. They looked to human betterment through greater protection from the "forces of nature" through altering the environment and, more recently, protection from the ill effects of earlier technologies.

With the rise of the medical technologies (e.g., surgical and pharmaceutical technologies) the technologies, as it were, moved indoors. They were directed to changes in the "internal environment" of the human body in order to promote healing and/or alleviate pain. In their primary objective they were directed to the betterment of the internal human condition, adding *bettering*, in a sense, to *betterment*. They were and are

<sup>7</sup> Cf., e.g., Irenaeus, *Adversus haereses* 5, 2. The citations from Irenaeus are taken (with minor changes in "style") from *The Writings of the Ante-Nicene Fathers* 1 (Grand Rapids: Eerdmans, 1926). Much of Book 5 is concerned with a refutation of the Gnostic notion of the corruption of the flesh.

applied to individual people on a basically *ad hoc* basis in order to correct a pathology or alleviate pain; in brief, they have historically been used to restore human beings to a recognized state of good health. We are now grasping for the power predictably and reproducibly to alter the human genome, to make *better* people, not just better conditions for human living. The use of such technological marvels as recombinant DNA in order to create new norms of health represents, I think, practically a change in kind in our use of scientific results. It is this difference that I try to capture in the distinction between *betterment* and *bettering*.

Now that genetic technologies ("bioengineering" in the popular literature) are becoming available, greater attention must be paid to the aspect of *bettering* human beings. The biological technologies in general, as well as the genetic technologies in particular, continue to look to human betterment by altering the environment external to us; this is the objective of the use of these technologies to improve manufacturing processes and plant and animal breeding. There is, however, another novel aspect, i.e. the growing scientific ability to alter the genetic structure of a person in order that the alteration may be passed on to future generations, to produce "better" human beings, however "better" is understood. I call this new capability genetic enhancement, realizing all the while that it may in fact be "disenhancing." The concept of scientific *human bettering* introduces a new universe of discourse.

Bioscientific discovery and its technological application force us to ask yet again, and with a new and greater urgency, the question of the Psalmist, "What is the human being?" The desire to build "better humans" implies that we know what a "good human" is. The contemporary life sciences and their potential applications are the most powerful scientific/technical achievement in history. We are at the threshold of deliberately setting our growth as a species—an awesome undertaking and a more awesome responsibility.

This new technological revolution, then, will make crucial demands on the Church's doctrinal understanding. We are facing the physical capacity to master ourselves technologically, a challenge so powerful that it must be met primarily in terms of human ends and purposes, not in terms of instrumentalities and means.

... biomedicine involves introducing changes in the human creature different in a fundamental respect from those that have followed technological and scientific innovations in the past. People did not intend to reduce the average height of the British lower classes when they introduced the factory system, and they had no plan to change the formative experiences of adolescence when they welcomed the Model T. Biomedicine, in contrast, involves the deliberate, not incidental or inadvertent, modification of the human organism; and it involves, besides, the

making of changes that will be irreversible. . . . Biomedicine has eliminated the insouciance with which most people have embraced technological progress. It forces consideration not simply of techniques and instrumentalities but of ends and purposes.<sup>8</sup>

Bioethics, in and of itself, while necessary, is not sufficient to the Church's need. As Dr. Harry Boardman, formerly of the Salk Institute, has stated:

But far too pervasively, these endless biomedical-science-value discussions manifest a deplorable blindness which seems to proceed from an hypnotic fascination with appliances and appliance makers. . . . The central concern is not with science or scientist, but with the whole of knowledge—its benefits, the price it exacts, and its special province: that of ideas. For ideas far afield from science and technology may be the most lethal. Inspiration to man's action lies not in his appliances—as much as they may encourage or inhibit it—but in the spell of ideas and the conviction of mind and heart which they generate.<sup>9</sup>

Boardman is clearly correct in his estimate that ideas are of crucial importance in the unfolding of the future in a "biological world." One of those ideas is the perennial notion that we can make of ourselves a better human stock. Eugenics is a dream that has survived enormous outrage. I use "eugenics" here only in its most neutral sense, that of well-bred. That there are problems with any notion of eugenics is shown not only in the practices of National Socialism but also in what is often the "higher truth" propounded by the promoters of eugenics, i.e. that there be less randomness and more order in the human situation. Frankel has exposed this side of eugenics:

The most astonishing question of all posed by the advent of biomedicine, probably, is why adults of high intelligence and considerable education so regularly give themselves, on slight and doubtful provocation, to unbounded plans for remaking the race. . . . The partisans of large-scale eugenics planning, the Nazis aside, have usually been people of notable humanitarian sentiments. They seem not to hear themselves. It is that other music that they hear, the music that says that there shall be nothing random in the world, nothing independent, nothing moved by its own vitality, nothing out of keeping with some idea: even our children must not be our progeny but our creation.<sup>10</sup>

<sup>8</sup> Charles Frankel, "The Specter of Eugenics," *Commentary* 57, no. 3 (1974) 27.

<sup>9</sup> Harry Boardman, "Some Reflections on Science and Society: A Terrain of Mostly Cliches and Nonsense, Relieved Only by the Sanity of Whitehead," a paper delivered at a meeting of the American Association for the Advancement of Science. I have never been able to find a reference to publication and have this talk only in manuscript form.

<sup>10</sup> Frankel, "Specter" 32-33.

A great deal could be written about the negativities involved in any approach to eugenics. Here, however, I shall concentrate only on the positive aspect, the creation of the New Human that many scientific popularizers mention with awe.

Consider the eugenics which maintains an interest only in truly positive human qualities, such as improved athletic skills, genetic resistance to diseases like hepatitis and the dreadful developmental diseases like Lesch-Nayan Syndrome or Tay-Sachs disease, increased longevity, greater mental acuity, and so on. We can tolerate in this development of the New Human such frivolities as ensuring that our offspring are a little bit taller, a little bit blonder, with blue eyes and so on. At present we can merely fantasize about what this new human being would be like. A carefully incremental development of genetic science and its applications could produce in time human qualities significantly greater than any we experience now. Truly the human race is entering into a future where the New Human is more likely than not to put in an appearance.

Christianity, starting with the letters of St. Paul, has always proclaimed the advent of the New Human, now in sacrament and, with the return of Christ, in its integral reality. In contrast to the promises of scientific/technological advance, the Christian vision of the New Human is eschatological and transcendent. The doctrinal question facing the Church now is the relationship between the immanent New Human of scientific/technical development and the eschatological New Human of Christian tradition. The question can be made more specific: Is the immanent New Human a part of (even an indispensable part of) the transcendent eschatological New Human to whom God has committed Himself? This is certainly an issue worthy of doctrinal development. The rapidity of the scientific development makes this an immediate and urgent concern of the theological community and of the Church. Can these two visions of the New Human be made to serve each other in order to bring about the deeper unity of the created world?

The human body, and hence the human person, is going to be "transfigured" one way or another—through the power of God and/or through the power and genius of human beings. We human beings are in a position to choose our bodied future. We Christians have the obligation to apply our view of that bodied future to the developing capacity to "redo" ourselves according to some controlling vision of the meaning of creation and of humanity.

Scripture assures us that we are created in the image and likeness of God, male and female we are created (Gen 1:27). We are at the threshold of being able to remake ourselves according to a human image of mankind. Our challenge is to understand (as best we can) both images in order



that the human image can be reconciled with the image and likeness of God and with God's will for us. Does the image and likeness of God make us icons of Christ in a way that includes or precludes being artifacts of human knowledge and skill? Is there something in our bodies, something about our bodies, in their shape, texture, and function, that is not to be altered, that is in some sense consecrated? St. Paul tells us that the fulness of divinity resides in Christ's body and that we are to be transfigured into copies of that divinity-filled body. Irenaeus, in an important but neglected passage, remarked:

Now God shall be glorified in His handiwork, fitting it so as to be conformable to, and modelled after, His own Son. For by the hands of the Father, that is, by the Son and the Holy Spirit, man, and not [merely] a part of man, was made in the likeness of God. Now the soul and the spirit are certainly a *part* of the man, but certainly not *the* man; for the perfect man consists in the commingling and the union of the soul receiving the spirit of the Father, and the admixture of that fleshly nature which was moulded after the image of God.<sup>11</sup>

In the Incarnation the Son of God did not assume some generalized kind of humanity, did not become human in a "one-size-fits-all" body. His was a very specific body, one particular enough to locate him uniquely in time, in space, in the history of Israel and of the human race. This is to say that his body was completely appropriate to his time, to his place, and to his relatives—as our body is appropriate to its time, place, and relatives. In other words, in the conformity of his body to its natural and historical environment he became a member of our race. Born in another time or place, the incarnate Son of God could not have become Jesus—no more than we could have been born at another time or place and have remained ourselves.

In the Eucharistic liturgy we pray that we may come to share in the divinity of Christ, who humbled himself to partake in our humanity. The sharing in divinity is our Christian calling and goal. For us to share in the divinity of the Lord, we must share in his humanity; hence we must share in his bodiedness, now sacramentally and, after his return to us, integrally in the final kingdom of God. Listen to Irenaeus again:

When, therefore, the mingled cup and the manufactured bread receives the Word of God, and the Eucharist of the blood and the body of Christ is made [the Greek text gives "and the Eucharist becomes the body of Christ"], from which things the substance of our flesh is increased and supported, how can they [the Gnostics] affirm that the flesh is incapable of receiving the gift of God, which is life eternal, which [flesh] is nourished from the body and blood of the Lord, and is a member

<sup>11</sup> Irenaeus, *AH* 5, 6, 1.

of him?—even as the blessed Paul declares in his epistle to the Ephesians that “we are members of his body, of his flesh, and of his bones.” He does not speak these words of some spiritual and invisible man, for a spirit has not bones nor flesh; but [he refers to] that dispensation [by which the Lord became] an actual man, consisting of flesh and nerves and bones—that [flesh] which is nourished by the cup which is his blood, and receives increase from the bread which is his body.<sup>12</sup>

Does the conformity of our bodied form to his, both now and in the resurrection, militate against any significant changing of that form through the use of the technologies we are gathering to ourselves? We must seriously probe the question of whether and how Christ’s body is normative for our bodies. Does Christ’s having assumed his bodily shape, texture, and function determine our present and future bodily shape, texture, and function? The incarnation, death, and resurrection of Christ say much about our physical nature and its destiny. Do they help us in determining the extent to which we may deliberately alter the body, and hence the person? We know that there are faith limits to living in the community of God. We know that there are moral limits to such living. Now, in the light of our growing biotechnological capacity, we must ask if there are physical limits to that living in God’s community. Do we, indeed, have a sufficiently developed doctrinal position “on the body” to answer this question? Since the body is most assuredly relevant to salvation and glorification, the question of physical limits to living in the body of Christ cannot be lightly dismissed.

We are and forever will be rooted in this very specific bodily form, transformed through death and resurrection in Christ. We shall rise into glory recognizably ourselves. That self-recognition is rooted in the body, the source and repository of individual human history and personal uniqueness. Written into this body each of us calls his or her own is the history of one branch of the human race which extends backward to human beginnings. That history, which is written by and into the body, must accompany us into glory, if we are to be recognizably ourselves to others and even (perhaps especially) to ourselves.

Our conformity to the body of Christ in which the fulness of divinity dwells is sacramental (fleshly, material, and “signifying”) and covenantal (unifying). In Colossians Paul states that God wanted all perfection to be found in Christ and all things to be reconciled through him and for him, everything in heaven and everything on earth (cf. Col 1:19–20). The entire created universe is to be conformed to and transfigured into the humanity of Christ. This clearly includes human beings. In the light of

<sup>12</sup> Ibid. 5, 2, 3.

this, there is an integrity in our bodies which is not to be manipulated at our own or someone else's whim. If we are conformed to and will be transfigured by the body of Christ, there is an iconal quality to the human bodied being. The body is indeed a living icon of Jesus Christ the Lord.

But Vatican II has unequivocally stated: "To believers this point is settled: considered in itself, such human activity [science and technology] accords with God's will. For man, created to God's image, received a mandate to subject to himself the earth and all that it contains, and to govern the world with justice and holiness; a mandate to relate himself and the totality of things to Him who was to be acknowledged as the Lord and Creator of all."<sup>13</sup>

While Vatican II gives little indication of recognizing the realities arising from the biosciences and biotechnologies (already clear then, at least in outline) and while it treats things *in themselves*, it does give a position on the biotechnologies, but not a direction to be followed. That position, however, is important, because it underscores a general Christian perspective about creation and the human role therein. God does not see human beings as competitors for power; rather, God calls humans to be collaborators, collaborators, in building the final Jerusalem. God does not reveal Himself as diminished by human attempts to assure mastery over creation. Mastery over creation, of course, is neither whimsical nor is it tyrannical. The meaning of mastery in the Christian understanding is revealed at the Last Supper: "You call me Lord and Master, and rightly; so I am. If I, then, the Lord and Master, have washed your feet, you should wash one another's feet" (Jn 13:13-14). Mastery, then, is loving service: washing the feet of creation.

God, in creating and redeeming in the human Christ, has given to human creatures the imagination and the power to transform the world, and now to alter themselves deliberately. In the humanity of Christ all of creation is factored into and conformed to humanity. In this universe, in virtue of the Incarnation, we never "play God"; we only and simply "play human." In the light of the events of God's incarnation, from conception through ascension, this is a human world, one to be understood, appreciated, cultivated, and loved—yes, changed to satisfy human needs and desires. The contemporary thrust of this "mastery" is the new question: Are we human beings apt objects of this direct and immediate technological intervention. Is it appropriate that human beings become artifacts of technologically directed creativity?

God clearly created a world-to-be-fulfilled. Human beings, as a part of that advancing world, are also to be fulfilled. While it is scarcely proba-

<sup>13</sup> *Gaudium et spes*, no. 34; tr. from *The Documents of Vatican II*, ed. Walter M. Abbott, S.J. (New York: America, 1966) 232.

tive, it is suggestive to make two observations. The Jewish Scripture opens in a garden, while the Christian Scripture closes with the description of a city. Also, Christianity, despite parts of its subsequent development, is an "urban" religion. What other major religion was begun in a city and developed primarily in an urban environment? No, Christians do not look back to a "garden experience," to Eden, to discover the fulness of their identity. Rather, they strain forward toward the City, the New Jerusalem, to discover who they are meant to be. Human beings, it is perfectly clear, do not constitute an unchanging reality, something given from the beginning and frozen for eternity. Clearly, we humans are still incomplete, waiting and hoping for the integrality to which we are destined and called.

Our technological genius—the ability to turn a given environment wherein we have been inserted into a world more suitable for human living and growing—is one of the ways human beings have to promote the growth of the kingdom of God. This ability, carried out sensibly and morally, with a loving appreciation of the beauty, complexity, and creaturely dignity of creation, and directed to God's will for all of His creation, is an essential part of Christian worship. The human body is perfectible (open to bettering) at least partially through human initiative, on human recognizance.

Prima facie, human beings seem to be included in God's command in Genesis to subdue and conquer the world. Like Vatican II's statement about human creativity, this statement is a position. It does not provide a direction for activity. Nonetheless, the position is important: biotechnological capacity applied to human beings appears to be a proper exercise of Christian stewardship. Yet, it cannot be an arbitrary activity. There are limits built into and upon our spiritual and material conformity to the body of Christ—those iconal qualities mentioned earlier.

"Iconal qualities" is a vague statement of the need for the conformity of our bodies to the body of Christ. Christian union with and conformity to Christ has been so long cast in "spiritual" terms that it is difficult even to pose questions about the body. Consequently, the first item in a doctrinal development "on the body" must be that of Christian union in a sacramental and covenantal world with the *body* of Christ. Union with Christ is more than a union of mind and will. We are images of God not simply because we are intellectual and volitional creatures, as is evident from the earlier citation from Irenaeus, which is the "one and the same" of the Chalcedonian definition. The image of Christ is historical because it is bodied.

It would seem, from this very brief treatment of an enormous area of study still to be done, that human beings may pursue (and probably

should pursue) the deliberate enhancement of their physical attributes. Since, however, such deliberate enhancement alters the person (who is a *union* of body and soul), such change as is introduced must also enhance our conformity to the body of Christ. It is here that we Christians meet the greatest challenge: Which physical alteration will enhance our conformity to the body of Christ and which will tend to destroy that conformity?

As was said above, there must be greater doctrinal clarity about the possibility of physical limitations on membership in the kingdom of God. If there are such limits, these are limits set on the use of the biotechnologies, at least insofar as they are aimed at human enhancement. (Note, again, that this treatment is prescinding from therapy. The discussion here is not directed at technologies for removing a pathological situation or for alleviating pain.) Again, if there are such limits, they issue from the divine call to humans to be conformed to the body of Christ. From that conformity it is necessary to develop criteria by which the question of biological enhancement might be prudently judged.

To that end, i.e. the development of criteria of judgment, consider the following five questions, which might possibly serve as a *beginning* of a doctrinal conversation on the meaning and role of the body in salvation and glorification, as well as on the propriety of certain biotechnological interventions. Assuredly, these questions are not the only ones that could be asked nor are they completely developed. Nonetheless, they are of service in helping to delineate more clearly the iconal qualities mentioned above and also in sharpening the doctrinal issues raised by the burgeoning biosciences and biotechnologies.

1. Does a particular biological alteration enhance the innate, internal dignity (which involves the sacramental and covenantal character of the body) of the human, or does it set up external criteria by which a human being is to be judged? Does our perceived human dignity derive from being who we are, or does it derive from success in functioning in society? Even now in Western society human dignity is judged more by success than by human identity. This can only become truer when children are more and more seen as products of human ingenuity rather than the fruit of love, more as our creation than as our progeny. Does any particular proposed bodily alteration enhance either the possibility or the fact of being the self desired by God, or does it look rather to one's fitting in better with someone else's preconceived notion of the person or with another's ideas of social need and desirability?

A cartoon in the *American Scientist* a half dozen years ago probably makes this point best. The picture is of a human cloning lab and shows a technician pounding on the lab director's door shouting in obvious

agitation: "Come quick! Come quick! All the Einsteins are tap dancing!" We would not have done all the work to clone Albert Einsteins if we had expected the effort to result in tap dancers. In that case, would we judge the attempt to produce Albert Einsteins a success? What would be our reaction to Einsteins who danced rather than thought deep thoughts? Einstein himself would probably have been delighted by the unexpected turn of events. Would we?

2. Tightly tied to questions of human dignity are questions of personal freedom. Does a particular enhancement foster personal freedom, or does it lead to the establishment of expectations the fulfilment of which will be coercive? This brings us back full circle to Murray's statement cited earlier: "First, the Basic Issues of our time concern the spiritual substance of a free society, as it has historically derived from the central Christian concept, *res sacra homo*, man is sacredness. . . ."

The enormous power of the biological revolution adds another dimension, seriously to be considered, to the Church's already impressive understanding of freedom. This revolution is occurring at a time of a radical individualism in Western society. Given a major impulse by the Enlightenment, this individualization was solidified by the stupidities of World War I and consecrated after World War II by the newly minted constitutional right to privacy. Murray remarks that the "modern concept of freedom itself was dangerously inadequate because it neglected the corporate dimension of freedom."<sup>14</sup> This is a neuralgic area in the development of the biotechnologies, insofar as intense privatization is at root a denial of the covenantal reality of creation and redemption.

3. This question (probably the most important) will not be as easy to develop as the earlier questions, since the Church's tradition is not as richly articulated in this area: Does the proposed biological alteration preserve (and increase) some form of bodily integrity? The concept of a bodily integrity necessary for salvation and glorification is so strange to us, accustomed as we are to think of salvation as something "spiritual," that it is difficult even to pose the question convincingly. It seems, however, especially in view of the cumulative theological expressions of the Fathers of the Church, that there is a traditional intuition of its importance. It is precisely here that there is need for a significant development of doctrine. The stunning advances in the biological sciences and technologies (and industries) provide the opportunity, the urgency, and some of the information needed to increase the richness of Christian doctrinal understanding.

What bodily integrity is needed for human conformity with and to the

<sup>14</sup> Murray, *We Hold These Truths* 194-95. These pages offer a striking description of "postmodernity."

body of Christ? How is the form of the body connected with the integral union of the Second Adam and the Second Eve and with the Eucharistic union of Christ and the Church? A side question of interest and importance is how theologians can articulate a doctrinal tract "on the body" for an essentially mysterious (in the religious sense of the word) future? Perhaps two further questions will elucidate aspects involved in the concept of bodily integrity.

4. As a specification of the third question, it may be asked whether the proposed biological alteration promotes a closer integration into the human community. Even more important for the Church, does it promote a closer entry into the sacramental living and growing of the covenantal community? Or does it, on the other hand, tend to isolate its recipient from the community? Is the intervention such that the one "created" by biological change is so exotic (so physically different) as to be unable to live comfortably with the rest of the human community? Were we to produce humans resembling the characters in the *Star Wars* cantina, we surely would shun the products, or at least isolate them from us.

This specification in terms of community is particularly important in an age of privatization, as mentioned under question two. Western society in general, and U.S. society in particular, has seen a rise in individualism practically to the loss of any sense of community. The Western individual has opted out of what Lippmann 60 years ago called the public philosophy. Murray stated this in exasperation 30 years ago:

The "open society" today faces the question, how open can it afford to be, and still remain a society; how many barbarians can it tolerate, and still remain civil; how many "idiots" can it include (in the classical Greek sense of the "private person" who does not share in the public thought of the City), and still have a public life; how many idioms, alien to one another, can it admit, and still allow the possibility of civil conversation?<sup>15</sup>

As important a consideration as this is with respect to the civil society, it is a much more urgent question for the Church. Since our living in Christ is by its nature sacramental, it must take place in a covenantal community. This question, then, can be still further specified as follows.

5. Does the proposed enhancement tend to promote the sacramental and covenantal worship of God, or does it lead away from that worship? Issues of marriage and reproductive biology naturally come to mind. Take a reasonably neutral issue as an example: the cloning of human beings. If and when we overcome the very serious scientific/technical problems involved in the cloning of human beings, what can be said doctrinally

<sup>15</sup> Ibid. 120.

about it? If the essence of Christian marriage is the total gift of oneself to another (as a sacramental sign of the union of Christ and the Church), surely cloning leads away from worshipful living. It is a radical flight from the sacramental and covenantal gift (two in one flesh) of oneself to another. It is basically a clutching of oneself to oneself and therefore it is a denial of worship.

These five questions have a common motif. They imply that no firm doctrinal determination of the role of the human body in salvation and glorification is to be found in considering the body simply in itself. In other words, the Church shall no longer be able to judge the use and value of the biological enhancement of the body "from inside out," i.e. by deciding what the body is or should be in terms of the body itself. On the contrary, the statement of these questions implies that the covenant instituted by the blood of Christ determines the criteria for judgment on serious deliberate alterations in the human composition. The Church will have to approach such alterations "from the outside in."

It seems that we are living icons of Christ, and implicit in the word "living" is being somehow legitimate *subjects* for human artifice. To cope with the possibility of being legitimate subjects of biological intervention (again, therapeutic use is not at issue here) for the enhancement of physical attributes, it is necessary to ponder the dimensions and demands of the covenant in the body and blood of Christ. The truths of the faith are not to be submitted to some "higher truth," whether that be sociological, psychological, philosophical, or biological. These latter truths are to be judged by the faith. The great theological agenda of the next century is the much deeper understanding of that faith in view of the real issues raised by human ingenuity.

#### AN APPROACH TO THE AGENDA

One possible approach to this theological agenda might build on a statement of Pope John Paul II, a distinction operative throughout Teilhard's *Phenomenon of Man*, and the Church's long-established tradition of covenant *una caro*. This clearly is not the place to expand these notions at length. Nonetheless, it might be of some value to indicate briefly this potential line of thought. Listen to John Paul II:

Unity involves the drive of the human mind toward understanding and the desire of the human spirit for love. When human beings seek to understand the multiplicities that surround them, when they seek to make sense of experience, they do so by bringing many factors into a common vision. Understanding is achieved when many data are unified by a common structure. The one illuminates the many; it makes sense of the whole. Simple multiplicity is chaos; an insight, a single model, can give that chaos structure and draw it into intelligibility. We



move toward unity as we move toward meaning in our lives. Unity is also the consequence of love. If love is genuine, it moves not towards the assimilation of the other but towards union with the other. Human community begins in desire when that union has not been achieved, and it is completed in joy when those who have been apart are now united.<sup>16</sup>

Earlier the pope stated:

There is, of course, the vision of unity of all things and all peoples in Christ, who is active and present with us in our daily lives—in our struggles, our sufferings, our joys and in our searchings—and who is the focus of the Church's life and witness. This vision carries with it into the larger community a deep reverence for all that is, a hope and assurance that the fragile goodness, beauty and life we see in the universe is moving toward a completion and fulfilment which will not be overwhelmed by the forces of dissolution and death. This vision also provides a strong support for the values which are emerging both from our knowledge and appreciation of creation and of ourselves as the products, knowers and stewards of creation.<sup>17</sup>

Like the pope, Teilhard de Chardin stressed the unity and mutual interaction of nature and history. He distinguished between "process" (cosmogogenesis) and what I would sum up in the word "event" (anthropogenesis, noogenesis, and Christogenesis). Process (the determinate, the unconscious, the impersonal) is no longer the sole operating principle in the evolutionary growth of the universe; it is continually yielding its primacy to event (the conscious, the personal, the free), to the coming of humanity, of consciousness, of freedom, and of love. And in Christ we find the model and meaning of process, event, and their relationships. Thus Teilhard states:

In a pluralistic and static Nature, the universal domination of Christ could, strictly speaking, still be regarded as an extrinsic and super-imposed power. In a spiritually converging world this 'Christic' energy acquires an urgency and intensity of another order altogether. If the world is convergent and if Christ occupies its centre, then the Christogenesis of St. Paul and St. John is nothing else than the extension, both awaited and un hoped for, of that noogenesis in which cosmogenesis—as regards our experience—culminates. Christ invests himself organically with the very majesty of his creation. And it is in no way metaphorical to say that man finds himself capable of experiencing and discovering his God in the whole length, breadth and depth of the world in movement. To be able to say literally to God that one loves him, not only with all one's body, all one's heart and all one's soul, but with every fibre of the unifying universe—that is a prayer

<sup>16</sup> John Paul II, "Message" M9.

<sup>17</sup> Ibid. M5.

that can only be made in space-time.<sup>18</sup>

Again and again both John Paul II and Teilhard in these respective works stress unity in multiplicity, unity in nature and history, in process and event. The Church's constant teaching from "the Christogenesis of St. Paul and St. John," as Teilhard says, has stressed the unity of love. The unity of love is not found in the absorption of the beloved into the lover, nor vice versa. The Christian notion of unity has long been expressed in *una caro*, in the union of two in one flesh. This clearly has significance for every major issue confronting the Church in our day. It has great import for issues within the Church (e.g., authority questions, sacramentality and ecclesiology, the role of women), as well as those facing the Church from the culture (scientific/technical advance, political issues, and so on, even those issues coming from thermonuclear holocaust). All turn on the notion of unity and of community. And notions of unity turn on the two-in-one-flesh covenant which is at the very heart of the Christian revelation.

Part of the contemporary theological crisis is our now centuries-long forgetfulness of the covenantal character of God's relation to us and to all of creation. This forgetfulness extends to what might be called a Christomonism, i.e. a theological consideration of Christ apart from his relationship to Mary and through her to the creation. Teilhard's prayer "that can only be made in space-time" depends radically upon Mary's fiat. Only in her acceptance of a two-in-one-flesh covenant does the Son become "one of us." It is in her covenantal yes that he has human relatives, a human genealogy, a human face. To overstress the hypostatic union at the expense of the two-in-one-flesh covenant (between two *integral* persons) with Mary is to render the Christian reality poorer. It is, seemingly, to make sacramentality practically meaningless, to render covenant incomprehensible and theology impossible.

The Incarnation was a covenantal event and in its present Eucharistic representation is still an event; in fact, it is *the* event. It unifies the Old Testament, the New Testament, and the final kingdom. It is the integration of all events and the very ground of history. Teilhard states this in different language:

As early as in St. Paul and St. John we read that to create, to fulfil and to purify the world is, for God, to unify it by uniting it organically with himself. How does he unify it? By partially immersing himself in things, by becoming 'element,' and then, from this point of vantage in the heart of matter, assuming the control and leadership of what we now call evolution. Christ, principle of universal vitality

<sup>18</sup> P. Teilhard de Chardin, *The Phenomenon of Man* (New York: Harper, 1959) 296-97.

because sprung up as man among men, put himself in the position (maintained ever since) to subdue under himself, to purify, to direct and superanimate the general ascent of consciousness into which he inserted himself.<sup>19</sup>

The insertion of the Second Person of the Trinity into creation through God's imperative offer of covenant and Mary's acceptance continues in the two-in-one-flesh union (bridegroom-bride, head and members) of Christ and Church. It continues to transfigure sacramentally the whole universe in and through us. Whether we use Teilhard's language or that of the traditional doctrinal statement, the truth of the matter is the same. Event (and every sacrament and every human response to God is an event) is modifying and, in Christ, transfiguring the cosmic process. Again, Teilhard: "Led astray by a false evangelism, people often think they are honouring Christianity when they reduce it to a sort of gentle philanthropism. Those who fail to see in it the most realistic and at the same time the most cosmic of beliefs and hopes, completely fail to understand its 'mysteries.'"<sup>20</sup>

St. Paul states: "And for anyone who is in Christ, there is a new creation; the old creation has gone, and now the new one is here. It is all God's work" (2 Cor 6:17-18). It is still God's work, this making new of all creation by modeling the Trinitarian unity in multiplicity through the union in multiplicity exemplified in the sacramentally effective two-in-one-flesh union. This union must be built realistically on the real structures of creation and on the real structure of sacramental transfiguration. We must understand both.

I propose that in theology we need two things desperately if we are going to bring the incredible richness of the Christian heritage to bear successfully on the exciting challenges coming from scientific and technical advance. The first is a far deeper understanding of the whole sweep of that advance and its vast implications for our understanding of creation. The second, more important need is for a significant development of our doctrinal understanding *de corpore*, and especially of the ancient theme *una caro*, the free unity of embodied being.

Such a doctrinal development demands two things: a respectful pondering of the tradition and its own inner, divinely directed dynamism, as well as a thorough understanding of the advances in the biological sciences. Though a development of doctrine on the body is not to be submitted to a "higher biological truth," it clearly cannot take place apart from biological understanding. The theological stance in such cases, it would seem, is that of Augustine cited approvingly in Leo XIII's encyc-

<sup>19</sup> Ibid. 293.

<sup>20</sup> Ibid.

lical *Providentissimus Deus*: "When they [here, scientist, etc.] are able, from reliable evidence, to prove some fact of physical science, we shall show that it is not contrary to our Scripture."<sup>21</sup>

#### RECAPITULATION

The advances in the life sciences and technologies present the Church with an opportunity and challenge calling for a major development of doctrine "on the body." The issues are urgent, calling for a thorough reinvestigation of the Church's tradition on the meaning of creation, on the sacraments, and on the (*una caro*) covenant. The results of advances in the biologies can be a means to deepen and enrich the unities within creation, provided they are infused with the graced presence of the Church.

Bioethics, while a necessary approach to such issues, is not of itself sufficient to cope with the full dimension of the new world coming from the biologies. That new biological world is already apparent. It must be included in the sacramental and covenantal world of the Church. Much, but not all, of the responsibility for that inclusion falls on the theological community. Like all major developments of doctrine, it is the responsibility of all, clergy and laity, educated and uneducated. The burden will fall heavily on Christian men and women of science as well as upon theologians and bishops. Rarely is a generation blessed with an opportunity of such magnitude.

<sup>21</sup> Augustine, *De Genesi ad litteram* 1, 21, 41. The translation here is taken from John Hammond Taylor, S.J., *St. Augustine: The Literal Meaning of Genesis* (Ancient Christian Writers 41; New York, N.Y./Ramsey, N.J.: Newman, 1982) 45.