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Proceedings of the Second International Conference

organized by the Pontifical Commission for the Apostolate of Health Care Workers on

The Humanization of Medicine

November 10-12, 1988
Vatican City Synod Hall

International Conference on "The Humanization of Medicine"

From the 10th to the 12th of November 1987, the Second International Conference sponsored and organized by the Pontifical Commission for the Apostolate of Health Care Workers was held at the Vatican City Synod Hall. Several Nobel Prize winners, Pontifical Academicians, numerous scientists, and over 600 participants representing 51 countries were in attendance.

The Conference was structured around three core topics. "Life and the Right to Life," "Man and Health," and "Man and Medicine."

The opening address was delivered by Cardinal Franciszek Macharski, Archbishop of Cracow, and 24 lectures were given in the course of three day-long sessions. The crowning moment was Pope John Paul II's visit and address on Thursday, November 12th. His words were of great current interest, providing clear orientations and support for scientists, experts, health professionals, and all devoted to alleviating suffering; he encouraged them to do so with respect and veneration for the sick. "Every sick person is my brother or sister" could well serve as the slogan echoing this Conference.

At the conclusion of the International Conference, the following statement, unanimously approved, was made public.

Closing Statement

We, servants of life—Christians and other believers, doctors, pharmacists, providers of care—health professionals gathered in Rome by the Pontifical Commission for the Apostolate of Health Care Workers, declare that a kind of dehumanization of medicine would be a real threat to civilization.

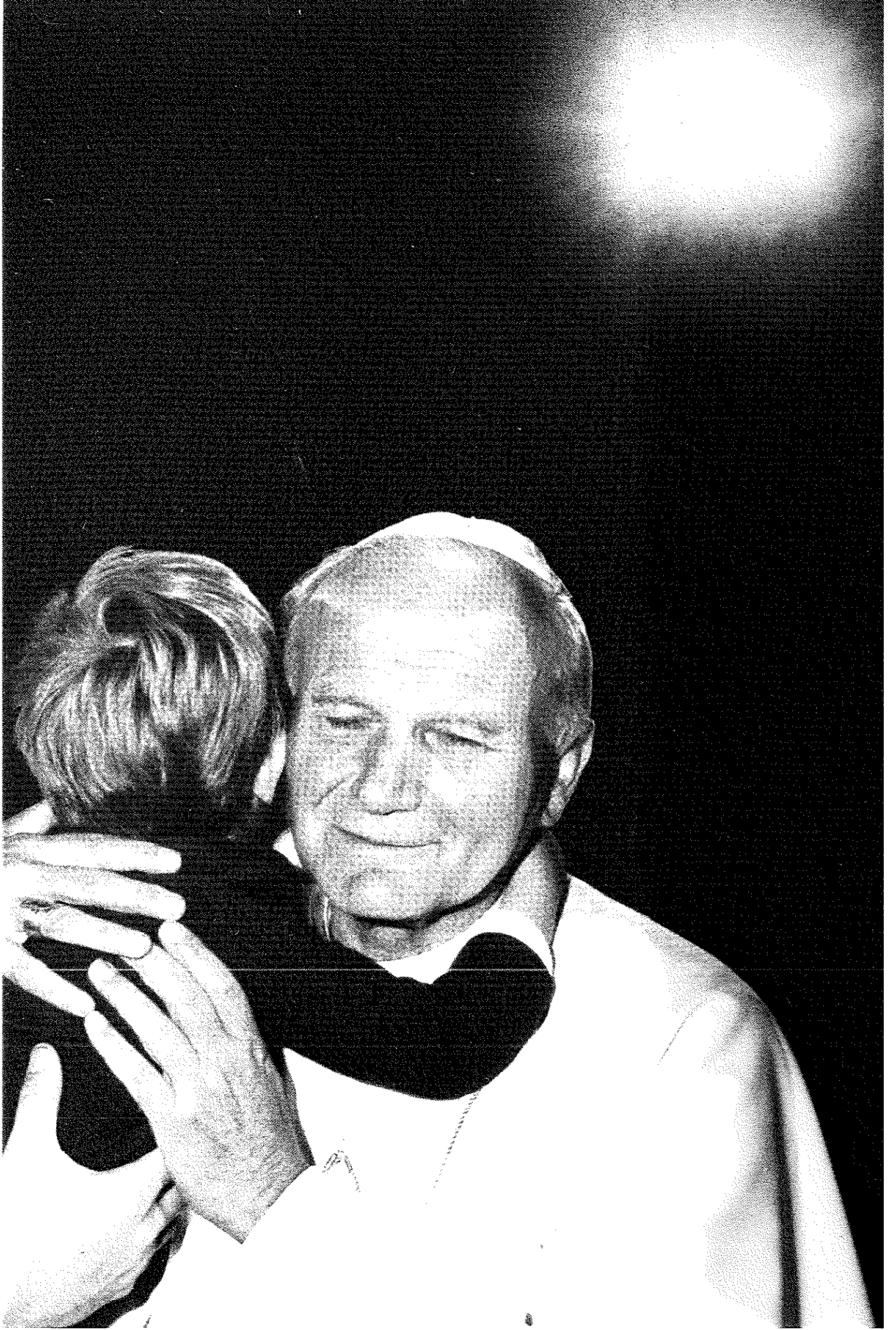
We know by experience that technology does not preclude compassion. The most modern means can be used without ever jeopardizing the absolute respect due to the patient, whatever his age, origin, affiliation, or religion, and whatever the disease affecting him. From conception to advanced old age, any rejection or exploitation of the human person is contrary to the very nature of medicine.

We remind all nations of their duty to protect the environment—physical and moral—of the generations to come. And we request wealthy peoples to offer unflagging, unselfish help to protect the health of the most deprived and vulnerable populations. We appeal to all men of good will so that protection of health will be founded upon a renewed spirituality: "Every patient is my brother."

Contents

The illustrations for this issue have been taken from M G. Ciardi Dupré's Choir Books of the Siena Cathedral *(Monte dei Paschi di Siena, 1972). The miniatures included are the work of various Italian masters of the second half of the fifteenth century.*

The photograph on the facing page was taken at the Basilica of the Dolores Mission in San Francisco, Thursday, September 19, 1987. The Holy Father is embracing little Brendan O'Rourke, aged five, a victim of AIDS. It is a sign of the Church's love for this new group of patients.



Humanizing Medicine Means Promoting and Defending Life

Pope John Paul II's Address to the Conference Participants

1. Ladies and Gentlemen, it is with deep joy that I extend my deferential greeting to you as you participate in the International Conference on the Humanization of Medicine sponsored by the Pontifical Commission for the Apostolate of Health Care Workers. This is a fundamental theme, one whose importance is being recognized more and more today.

2. Life is a gift of God. Man is not its lord, but rather its responsible administrator. "It is the Creator of the world who shaped the beginning of man and devised the origin of all things" (cf. 2 Mac 7:23). In all the expressions of his life, then, man belongs to God, to whom he must respond *(is this not perhaps the etymological root of the term "responsible"?) concerning the use he has made of this great gift.*

It is from this that the nobility of medicine, which is by definition service to human *life, derives. As such, it involves an essential and inalienable reference to man as a spiritual and material whole and his individual and social dimension: medicine is at the service of the person, of the* whole *person, of* every *person.*

Of this truth you are profoundly convinced, following the lines of a most ancient tradition having its roots in the first intuitions of Hippocrates. However, it is precisely this conviction which gives rise to your concerns as scholars, scientists, and researchers, due to the snares to which modern medicine is exposed. In fact, "the new frontiers... opened by the progress of science and by its possible technical and therapeutic applications touch the most delicate spheres of life at its very sources and in its most profound meaning" (Dolentium Hominum 3).

It is partly these concerns which have moved you to gather for this conference, as you desire to contribute your expertise in the formation of strategies to safeguard more effectively the fundamental gift of life and promote it more consistently.

Moving from the general to the particular, the questions dealt with in the conference wisely begin with a reflection on life and the right to life; hence with man and health, and, finally, with man and medicine. Discourse about man and health, about man and medicine, in fact presupposes a clear conception of life, of the right to it and its quality.

Promote integral development

3. Since it is obviously impossible for me to consider all the many particular questions addressed by your conference, I wish to offer some reflections on the central theme, around which all the other questions revolve: the theme, that is, of the humanization of medicine. *It reaches the very heart of the right-duty to defend and promote life and its dignity. There can in fact be no authentic promotion of human life without a growing humanization of medicine, one which extends beyond merely scientific and technological contributions. In fact, "science and technology are valuable resources for man when placed at his service and when they promote his integral development, for the benefit of all, but they cannot of themselves show the meaning of existence and of human progress. Being ordered to man, who initiates and develops them, they draw from the person and his moral values the indication of their purpose and the awareness of their limits." (Con-*

gragation for the Doctrine of the Faith, Instruction on Respect for Human Life in its Origin and on the Dignity of Procreation, *2).*

Your conference aims to place within an organic framework the various problems regarding the notion of life and the right to life, the questions posed by the great development of pharmacology, the expectations aroused by the urgent need to safeguard the environment, the tensions connected with the growing imbalances between industrialized nations and developing nations, the prospects for a political strategy defending and promoting human life on earth.

This is a vast and stimulating assortment of questions, which I urge you to examine in depth. I wish to point out, however, that the necessary criterion would be lacking if the various questions were treated without an adequate anthropological vision capable of guiding the discussion towards true progress. In fact there are forms of scientific advances which do not coincide with the authentic good of man; in such cases scientific progress becomes a form of human regression which can even be the prelude to tragic consequences. It is precisely in consideration of this fact that one must emphasize the axiom that not everything which is technically possible is morally and ethically acceptable.

4. A truly humanized practice of medicine cannot remain indifferent in the face of scientific research seen as an end in itself, ignoring the requirements of an authentic service to man. The study of life, too, must be translated into service to life. The questions raised by experimentation, by the relation between population and resources, by irreversible illness, have become graver as technological progress has made available solutions and strategies that offend the dignity of life and of the human person.

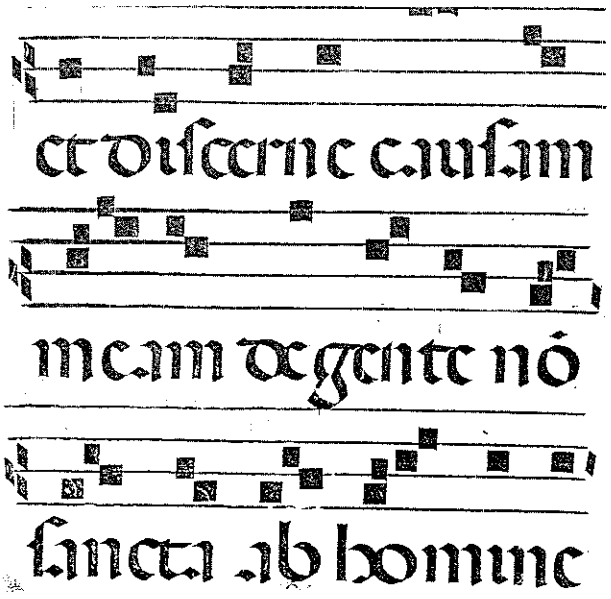
In order to stand firm against suggestions stemming from such an outlook, it is indispensable to possess adequate anthropological points of reference; the elaboration of these can be much enhanced by interdisciplinary dialogue and, in a particular way, by reflection on the data of Christian Revelation.

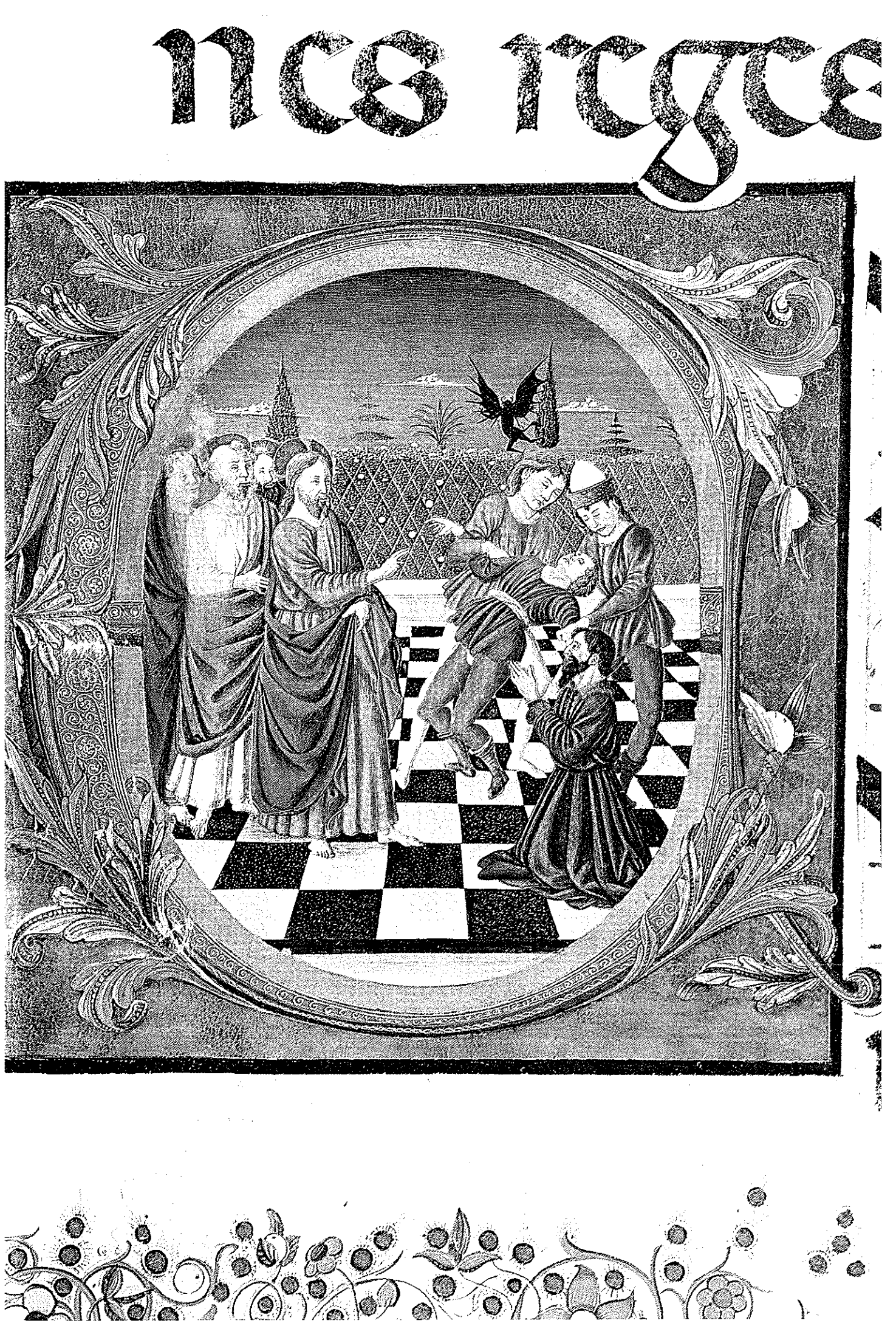
The history of these two thousand years of the new era shows what a contribution can be made to a true humanization of medicine by the inspiration of the Christian faith. This faith, by bringing us to see in every person a brother or sister, bases service to life on the universal commandment of love. This was well undestood by Dr. Giuseppe Moscati, whom I had the joy of declaring a saint last 25 October. He said: "Not science, but charity, has transformed the world..... " University professor, head physician, and researcher, Dr Moscati had direct experience of the primacy of love in service to life.

The commandment of love has its roots in the natural law of human solidarity and draws vitality from the very Love which is God. Not only this, but in the effort to promote life, love also becomes the constructive meeting point with those who, due to mysterious circumstances, have not received or understood the message of Jesus. Even a superficial look at the history of medicine allows us to note a singular continuity between human and Christian values, thanks to whose interaction there has been formed that rich patrimony of civilization and progress which is the pride of your profession.

5. Inasmuch as it draws near to man in the crucial moment of suffering, when he acutely perceives the need to safeguard his health, medicine must make of those who exercise it, at all levels, experts of great human sensitivity. This is true, obviously, in the context of the individual relationship, *where humanization means, among other things, openness to all that leads to the inderstanding of man, his interiority, his world, his psychology, his culture. The humanization of this relationship involves a simultaneous giving and receiving, that is, the creation of that communion which is total participation. Only in this way does service also become witness and, being service to life, transform itself into an incentive to love life, to grasp its truest and deepest meaning in all of its manifestations.*

This, however, is true on the social level *as well; here the need for humanization is*





translated into the direct effort of all health-care workers, each in his own sphere and according to his sphere of competence, to promote suitable conditions for health, to improve inadequate structures, to eliminate the causes of so many illnesses, to foster the just distribution of health-care resources, to see to it that health-care programs throughout the world have only the good of the human person as their end.

6. The humanization of medicine responds to an obligation of justice, one which can never be met by completely delegating it to others but which requires the efforts of all involved. The field of operation is immense: it extends from health-care education to the promotion of greater sensitivity in public authorities, from direct involvement in one's own work environment to those forms of cooperation — local, national, and international — which are made possible by the existence of many organizations and associations that have as part of their statutory purpose the call to render medicine ever more human.

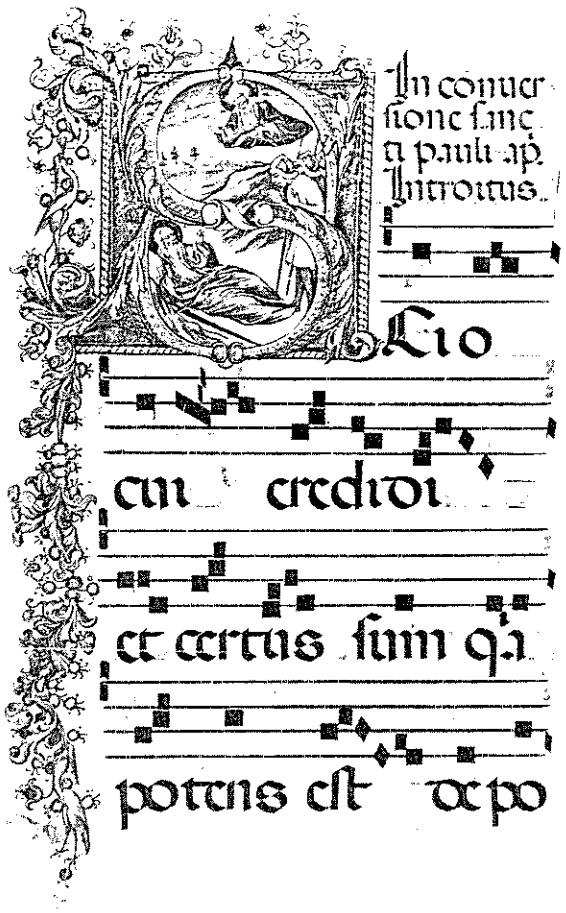
*The Church, which considers solicitude for those who suffer an integral part of her mission (*Dolentium Hominum, *1), and which sees man as her " own way " (*Salvifici Doloris, *3), is close — as the recent Synod has rightly pointed out and emphasized — to the laity who, personally or in associations, work for a growing humanization of medicine. Through individuals and institutions, she is directly involved in the world of suffering and of health, with the enlightened and generous collaboration of health-care workers. Whence emerges, in fact, a special and decisive challenge in our day: we cannot remain passive in the face of a continuing situation in which entire populations suffer from ills that medical science is now able to treat and overcome.*

To humanize medicine is to accept this challenge and to work generously for the construction of a world in which every human being is guaranteed the means necessary for the full appreciation and use of the fundamental gift of life, which has its origin and its ultimate end in God, " who loves the living " (Wis 11:26).

In exhorting you to do everything in your power to respond to this most noble task, I invoke upon you and your work the illuminating and consoling blessing of Almighty God.

Tribute to His Holiness John Paul II

Holy Father, we who are privileged to attend this Conference are honored by your presence among us. We and the world of the sick are deeply grateful for the leadership and inspiration you have provided from the earliest days of your Pontificate in the interests of the sick, the poor, and all who daily carry the Cross of Christ and live in the shadows of life. You have inspired and encouraged all of us in your many addresses to health workers, the sick themselves, and the world at large with your call to " humanize sickness. " Even more significantly, you have lived Christ's own healing message in your own sufferings and in your embrace of the sick, the handicapped, the depressed, and the forelorn among our brothers and sisters. Your Apostolic Letter *Salvifici Doloris* evokes for us the full meaning of Christ's parable of the Good Samaritan. Your establishment of the Pontifical Commission for the Apostolate of Healt Care Workers, under the able leadership of Archbishop Angelini, gives support of the universal Church for the sufferings of each sick person and the efforts of all who in Christ's name try to help them in their predicament of illness. You have called this Congress to help us make more explicit what it means to " put on Christ " in today's technological, institutionalized, and often dehumanized medicine. We trust that the Holy Spirit has illuminated our deliberations so that, in some measure at least, we have advanced your hope that for believers and nonbelievers the ministry to the sick will be infused by some degree of



Jesus' own solicitude for those who suffer. It is our task to blend science with the Christian humanism you taught us in your first Encyclical, *Redemptor Hominis*.

On behalf of the fifty-one nations represented at this Congress, I pledge our unstinting efforts to take your teaching to heart, to respect human life for the miracle and mystery it is, to fuse our science with compassion, to follow your own example, and, above all — in the measure God's grace permits each of us —to emulate Christ's example in our daily encounter with the human predicament of illness and, in your words, to " humanize " that predicament in every sick person, who is truly our brother or sister.

Prof. EDMUND PELLEGRINO, M. D.
Director of the Joseph and Rose Kennedy Institute of Ethics at Georgetown University, Washington, D. C.

Words of Card. Franciszek Macharski

Opening Address: The Humanization of Medicine Is Decided in Man's Heart

1. It is truly a great joy and honor for me to be able to open this Second International Conference, devoted to the topic of " The Humanization of Medicine. " First of all, I would like to devote a word of heartfelt gratitude to the organizers—in the person of the Pro-President of the Pontifical Commission for the Apostolate of Health Care Workers, H. E. Msgr. Fiorenzo Angelini—for having selected precisely this subject, of great current interest today for the Church as well. To make man's life increasingly humane is exactly one of the fundamental objectives of her work of evangelization in the contemporary world.

I greet and thank all those who have committed themselves to present to this illustrious assembly the precious fruits of their own research, experience, and meditation on the various problems connected with the humanization of medicine. Ladies and gentlemen, your high level of competence in this area is a guarantee of the depth and scientific seriousness of all that will be said in this hall, and also of the wisdom with which man and his problematic must be approached. I greet and thank all those present. Ladies and gentlemen, your participation in this Conference—in spite of your numerous professional and social commitments—offers quite eloquent testimony of your profound sensitivity to the future development of medicine, to which you contribute not only as physicians and scientists, but also as Christians.

2. I shall begin my brief opening remarks with two images which, in my opinion, immediately lead us into the core of the topic for our Conference.

In September of this year—barely two months ago—an event took place which deeply touched many hearts. During his last apostolic journey to the United States, in Los Angeles, at the Dolores Mission, Pope

John Paul II very tenderly embraced a child ill with AIDS. To speak of this episode requires great discretion and tact. It constitutes a kind of revelation of the *humanitas* which Christ at once embodies and originates and to which He calls everyone.

Another very significant personage for the subject of our Conference is Mother Theresa of Calcutta. Mother Theresa, an apostle of love for man, especially concentrates in her activity on two moments of human life in which the person is frailest and weakest—birth and death. When Mother Theresa defends and aids man—the one who has not yet been born and the one who is about to die—she takes us all to the school of deep respect for the human being and service to man in every situation.

These are the two images: a gesture by the Holy Father, John Paul II, and the humble service of Mother Theresa. In them are contained a ringing call and a challenge for the contemporary world; in them are expressed a deep certainty and an extraordinary power issuing from faith and the knowledge of God and man.

3. The humanization of medicine is decided in the depths of man's spirit, in his heart, for it is precisely there that it becomes clearer who man is before God, before his brother, and before himself. The humanization of contemporary medicine particularly depends on the wisdom of the heart needed to channel scientific discoveries towards the true good of mankind.

We are witnessing a vertiginous development of science and technology which can save and improve the lives of so many men or bring unimaginable harm. In this regard, it is worthwhile to recall the words of the Second Vatican Council: " Our age, more than any of the past, needs such wisdom if all that man discovers is to be ennobled through human effort. Indeed the future of the world is in danger unless provision is made for men of greater wisdom " (*GS*, no. 15). I am now thinking of genetic engineering and medical experiments involving the transmission of human life which arouse so much concern and even fear today.

4. The proclamation of the dignity of the human person and the movement in defense of human rights are no doubt the leading signs of our time. They express a healthy moral sensitivity on the part of contemporary man.

However, to proclaim the dignity of the human person also means to defend man from the powerful pressure exerted by modern technology, along with the strong temptation to reduce man to the level of things and judge the value of human life according to the criterion of efficiency or utility.

No, man is not a thing and must be regarded as he truly is. He must not be made use of as if he were an object or approached as if he were a thing! The Second Vatican Council affirms that man is the only creature on earth that God has willed for himself (cf. *GS*, no. 24). This is the true value of the human person and his life.

In our century, man's relation to the problem of life has been notably influenced by medicine, which has been termed the most humanistic of the natural sciences and and the most naturalistic of the sciences of man. Numerous consequences flow from this close link between medicine and the natural sciences. Among other things, it must be borne in mind that contemporary natural sciences are not at all neutral; on the contrary, beneath their apparent objectivity they frequently harbor numerous ideological presuppositions. Above all, the experimental sciences exclude man as subject from their considerations and conceive of him in a relativistic manner, reducing him to the level of a thing and denying all his transcendence. And precisely here the grave danger of dehumanization arises for medicine.

5. In a wholly special way, the general principle of the priority of ethics over science and technology should be applied to medicine, which touches upon the problem of human life so deeply. Pope John Paul II has tirelessly recalled this fact, as we see, for example, in his unforgettable address at UNESCO seven years ago. It is helpful to repeat some of the most significant passages: " The future of man and of the world is threatened, radically threatened, in spite of the undoubtedly noble intentions of the man of culture, of the man of science. And it is threatened because the wonderful results of his research and of his discoveries, especially in the domain of the natural sciences, have been and continue to be used—to the detriment of the ethical imperative—for purposes having nothing to do with the demands of science and even for purposes of destruction and death, to an extent heretofore unknown, causing truly unimaginable harm. When science is called to be at the service of man's life, we all too often observe that it has become the slave of goals which are destructive of man's true dignity and human life. Such is the case of scientific research when it is oriented towards these goals or when its results are applied to ends contrary to the good of humanity. This is borne out in the spheres of both genetic manipulation and biological experimentation and chemical, bacteriological, and nuclear arms ... " To this diagnosis the Pope has added certain important

ethical imperatives: " Consciences must be mobilized! The efforts of human consciences must be increased in keeping with the tension between good and evil to which men at the close of the twentieth century are being subjected. We must be convinced about the priority of ethics over technology, of the primacy of the person over things, of the superiority of the spirit over matter " (cf. *Redemptor Hominis*, no. 16). " The cause of man will be served if science allies itself with conscience. The man of science will truly help humanity if he preserves a sense of man's transcendence over the world and God's over man " (Address of John Paul II at UNESCO, June 2, 1980, nos. 21, 22). To speak of the humanization of contemporary medicine we must start precisely from these fundamental principles.

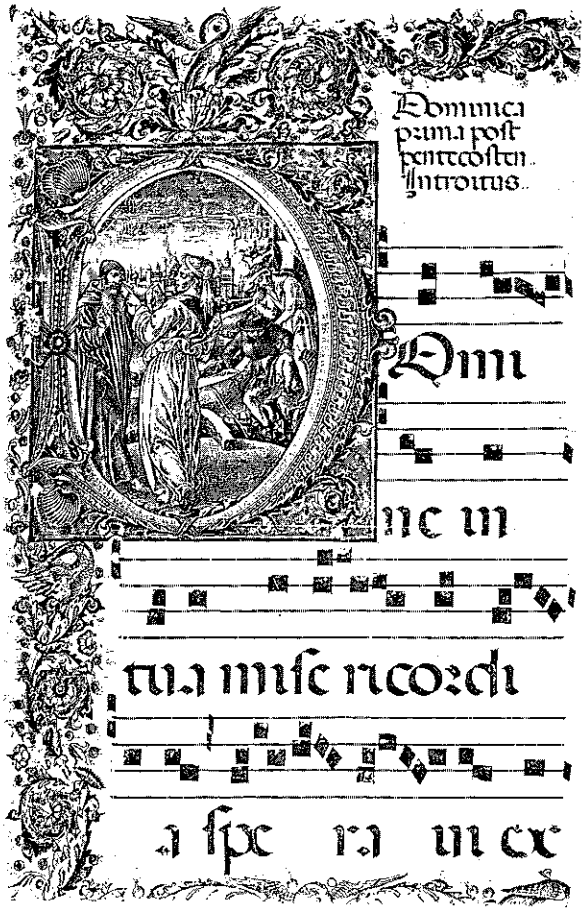
6. In ancient Rome there was an office called *defensor civitatis*. The *defensor civitatis* was an official charged with assuming power in the case of a cataclysm to save the threatened population. But when in the Roman Empire calamities much worse than an earthquake or a flood took place—namely, the invasions by barbarians—the traditional structures and institutions of the State collapsed. In the face of the unprecedented threat, another stepped forward—a new *defensor civitatis*—on this occasion, a Bishop, to defend from the inhuman terror and slaughter by the barbarians.

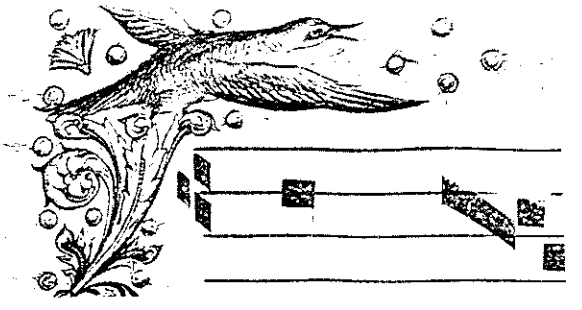
It may be stated today, without exaggerating, that after 1500 years there is need for a new *defensor civitatis* capable of protecting humanity from the flood of a new " barbarian invasion " manifested in the moral degradation of behavior and, above all, in a frightful loss of respect for man's dignity and the value of his life.

For the defense of man in contemporary civilization, the determined efforts of all men of good will are necessary. It is precisely for this reason that we have met here as new " defenders of man " spurred by the Pope's constant concern that medicine may be fully human—such a noble science at the service of man! The Church has been placed by Christ to safeguard and defend the human person in his totality—i.e., in all the phases and situations of his life. The Church proclaims deep respect for human life as a gift of God the Creator. The Church defends life, threatened today on all sides: by subjection and poverty; by injustice and exploitation; by terror, violence, and war, including nuclear war. The Church is an ally of all of you, who by profession—or, rather, by vocation—have chosen the defense of the life and health of each individual and of the whole of society.

7. I ask the Lord, the source of all life, to bless the sessions of this Conference. It is my heartfelt wish that this Second International Conference, devoted to " The Humanization of Medicine " and promoted by the Pontifical Commission for the Apostolate of Health Care Workers, may successfully carry out the noble task of defending man from the danger of dehumanization. I reiterate my thanks to the organizers. The decision by the Holy Father, John Paul II, to create a special commission for the apostolate of health professionals was truly providential. The development of its activity in the Church and in the health field confirms the pressing need which existed for this kind of ministry and service. I hope the Commission will always be an abundant source of apostolic dynamism and of all the inspirations and initiatives of which the world of health care workers has greatest need.

Cardinal FRANCISZEK MACHARSKI
Archbishop of Cracow





Statement by Archbishop Fiorenzo Angelini

Giuseppe Moscati: A Holy Physician for Our Time

I consider it a happy coincidence that this second International Conference should be held just after the canonization of a doctor, Giuseppe Moscati. Much has been said and written about this extraordinary event; it is, in fact, the first case of a doctor from the contemporary modern era being raised to the honors of the altar. There again, if holiness is the fullness of humanity, then the saint is the teacher of humanity. Since Giuseppe Moscati was a doctor and researcher, a man of science, his holiness is a striking example of the humanization of medicine.

I should like to speak briefly on an aspect of this exemplary relationship between medical science, humanity, and holiness.

In outlining the life of Giuseppe Moscati, the Holy Father, Pope John Paul II, quoted a succinct remark of the doctor-saint: " It is not science but charity that has transformed the world. " This clear and sharp statement, appearances to the contrary notwithstanding, is not making a juxtaposition but underlining an interaction. It is equivalent to saying: only if accompanied by charity, that is, only if humanized, can science transform the world. Written and other evidence confirms that this conviction arose in Giuseppe Moscati out of his personal contact with those who were suffering. He was fond of saying: " Blessed are those doctors who think of the souls of their patients! " And again: " Remember that you must deal, not just with bodies, but with souls! " In fact, he applied to his own profession and mission, felt and lived in the light of the Christian concept of man, the intuition of classical humanism: " Homo sum, et nihil humanum a me alienum puto " (I am a man, and I consider nothing human alien to me). Science in the service of man is such only if it reaches the entire man.

It might be thought that associating science and charity, science and humanity, im-

plies some sort of reduction in the recognition of the limits of science. The opposite is true. It places science in its truest dimension, namely, in relationship to man.

Like the past history of medicine, so too the future of medicine has but one name: man. Medical science does not stand over against man, but alongside him, and he remains a mystery in his wholeness. Only the human dimension, charity, that is, the effort to reach man in what is most human about him, can introduce science into the mystery of man. This human facet is the only factor unifying that knowledge *per partes* that is also characteristic of medicine in our time. This, in its present-day extraordinary progress, while achieving a valuable dissection of man, can run the risk of forgetting his physical and spiritual unity. Science and humanity, in the doctor, the research worker, the man of science, are not two distinct things; they have to work hand in hand.

In Giuseppe Moscati, holiness was not something added on, extraneous to his vocation and profession, but came to maturity in these. As a doctor in the full sense of the term, and striving to enrich his thought and work as a doctor with the Christian view of life, he crowned both one and the other with his holiness. The deepest meaning of this sublimation of the human and humanization of the mystery finds in medicine its meeting-point, in that which we call service to life. Indeed, it is life itself that demands from whoever places himself in its service a contribution made whole by charity or, if you wish, by humanity.

Giuseppe Moscati was a holy physician because he always perceived in everyone the sacredness of life, its untouchableness, its supreme value, the measure and yardstick of the worth of his medical research and work.

In saying that Giuseppe Moscati is a doctor-saint for our time, I do not wish to imply that the meeting between science and holiness, science and humanity, is confined to one particular time rather than another. I believe, however, that I am not creating a paradox when I say that the relevance of a particular subject derives from a crisis in it. On the threshold of the socialization of medicine, Moscati noticed the risk of a dangerous dissociation between scientific research and progress in the art of medicine, on the one hand, and the marginalization of man, on the other. Only the reconquest of the concept of the sacredness of life and the necessity of service to life can lead to a meeting between science and humanization of medicine. A reconquest, not a discovery, since having come to birth as service to life, medicine will always find the measure of its true progress in man.

A conventional, stereotyped definition sees the recognition of holiness as the elevation of a person to something that is greater than himself. It is an incorrect, rhetorical definition. Holiness is recognized because of its relevance. Celebrating the holiness of a person should not lead us to place that person above ourselves but rather to place him in our own age, recognizing him as the personification of an ideal not to be admired, but imitated. The lesson of Giuseppe Moscati, doctor and saint, is this. In him, holiness was the crowning perfection of humanity, and, in being a physician, he was an exemplary one because he was superlatively human.

✠ FIORENZO ANGELINI
Pro-President of the Pontifical Commission for the Apostolate of Health Care Workers

Words of
Card. Paul Zoungrana

God Has Taken Man's Greatness Seriously

First of all, I must thank the President of this Session and Monsignor Angelini, the Pro President of this Pontifical Commission, for so kindly allowing me to speak.

The Humanization of Medicine is a question of great importance. I am a layman in this field, and I am going to be so bold as to express my feelings as a Pastor from the Third World.

By way of introduction, may I be allowed to say this. Your assembly, so numerous and so highly qualified, arouses in me both admiration and, at the same time, deep gratitude, with regard to your persons and to the different countries you represent. Indeed we are witnessing now, in the last few decades, a magnificent spectacle of International Cooperation to make Health flourish even in our fragile regions in the Third World, especially in Sahel. This is also an opportunity for us to thank Pope John Paul II for having set up this Pontifical Commission for the Apostolate of Health Care Workers, under the leadership of Archbishop Angelini.

The Humanization of medicine! My reaction to this problem is conditioned by two sources of knowledge: the information found in the press, which communicates to us what is happening in the field of medicine around the world, and also the daily lived experience of this same sector of medicine in my own environment.

News about breakthroughs and the successes of pioneering medicine fill the popular newspapers and magazines. Much is spoken and written about the problems of heart transplants, artificial insemination, *in vitro* fertilization, embryo transfers, etc.

In the face of such an abundance of literature, one has the impression of a hasty search for a formula capable of placing on the same footing the love of two spouses and combinations obtained in a laboratory, or even of raising the techniques of zootechnology to the rank of a sort of very refined medical art called " assisted procreation. "

Some might think that these problems of Medicine are perhaps of no interest to us, given that poor countries have not the sophisticated means available to carry out these techniques. I must, however, state that we are interested, indirectly of course, in these problems and techniques.

At the same time, we all know there are instances where certain experiments — which could not be carried out in rich countries because resistance would be too strong and public opinion could arouse reactions — are performed in the poorest countries, almost without those concerned being aware of it. Such actions deeply injure human dignity.

The abundance of information about the conquests of pioneering medicine does, however, entail the risk of making us forget everyday problems: these exist and are important in both industrialized countries and developing nations, though with different characteristics.

In the developed countries, thanks to the very advanced progress of medicine, the patient is taken into custody as regards all the plans for his treatment. But this sick person appears less a subject than an object. He seems stripped of all power of choice; he cannot make decisions. He is treated like someone unable to understand or to will; all independence has been taken away from him; everything is organized and decided without him. Sometimes his body is exposed to all manner of things, gazed at by everyone, touched and probed by all. Nevertheless, everyone should have the idea that whoever goes near someone sick is approaching a person, a human being worthy of attention and respect. Moreover, the phrase " to humanize medicine " expresses, from now on, the beginning of order. To achieve it, there are those who place the accent on the relationship of dialogue and corresponsibility between the medical staff and the sick person: there are, likewise, those who emphasize the need for a more human formation of the medical staff, doctors and nurses, so as to put some soul into an education too concentrated on organization and technique; others, still, accuse the administrative bodies of being too absorbed in politics and bureaucracy and of promoting complicated proceedings in the execution of an assistance dossier; finally, others favor the establishment of Tribunals for the rights of sick citizens and the organization of Ethics Committees, not just to oversee

and control experiments or particular, well-defined situations, but also as places for formation, debate, and education.

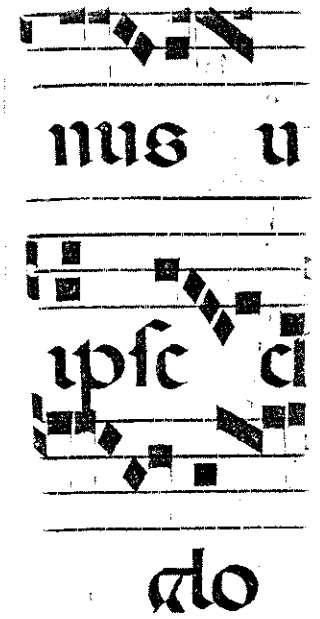
We understand and respect these points of view as well as this whole problem area, and we hope that a truly human practice of medicine can be attained in all parts of the world.

In the context of the developing countries, the problem is posed in different terms and with more serious urgency. For us, humanizing medicine would mean: " Bringing medicine to those who do not have it! " In order to understand this urgent need, you have to know what it means to have only one doctor for 30,000 people! Or what it means to lack medicines with which to look after oneself! And how to deal with the tragic situation of the sick person who does not even bother to go to the doctor because he knows that even if the latter is able to diagnose the disease, he himself has not the wherewithal to purchase the prescribed medicines! On this subject, I would like to express special thanks to those who generously send medical supplies to the Third World; I would, however, ask them not to send medicines which have passed their expiration date—they could cause even more serious illnesses.

But how, in the last analysis, can man achieve the humanization of medicine? I believe there can be no humanization without the evangelization of medicine. The Church draws her wisdom about man from the Person of the God-Man, Jesus Christ; she can point out a unique and fundamental reference point: *respect for the human person*, but that demands *a spirit of renunciation of all power and domination over others*; that requires *a conversion of heart, and conversion comes about through the spirit of the Beatitudes*.

God has taken the greatness of man seriously; he has become incarnate, he has become one of us. Because of this, when we speak of man, of respect for man, we are also speaking about respect for God. In Jesus, God has taken on humanity, not for a fleeting visit or to bring passing help, but once and for all. After the coming of Jesus, the human body is capable of bearing the infinite weight of the divine life: because of that, those who say they are of Christ have to give proof of extreme solicitude for all human life, whether that life is that of a fully developed body or simply that of the embryo, whether it is that of a well-formed body or of a handicapped person: " The spirit of man, " said Pope John Paul II to young people, " awakened to the reality of God and drawn by it towards its eternal destiny, must enlighten the whole of life in time with a new conscience " (1983).

Jesus himself has given us the example. His public life was lived, in large part, in the midst of the sick and his acts of healing are full of humanity. Very often he forestalled the sick person's request: he had pity on the widow of Nain and raised her son (Lk 7:13); he cured the man with the withered hand (Lk 6:6-7), the crippled woman, and the man beside the pool at Bethsaida (Jn 5: 5-9). It is he who takes the first step: the Gospel speaks of Jesus being moved by compassion, of curing by laying on his hands. The Gospel seems to want to say to us that, for Jesus, curing meant involving the whole of his being, his humanity and his divinity.

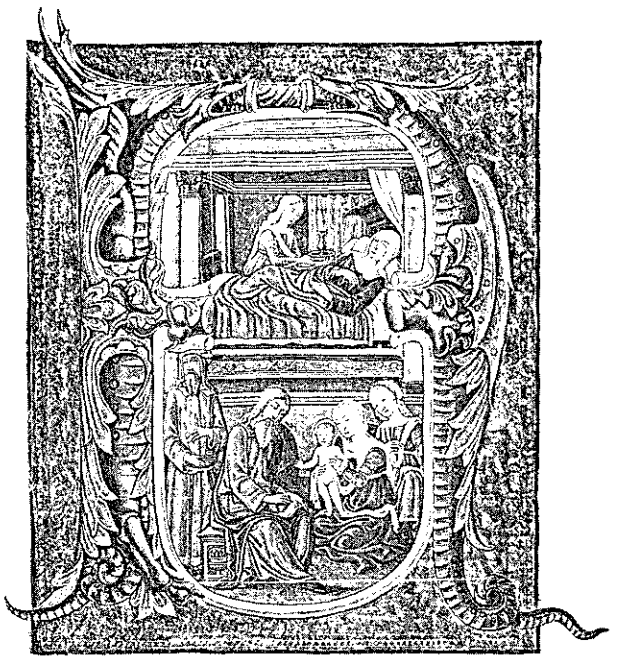


May the example of Jesus accompany our world of Medicine along the path to a true " humanization of medicine. " Such a prospect does not involve healing alone: the sick must be given the hope of being able to live a truly human life; we must see to it that around them there is created an environment sensitive to their needs, above all to their need of being inserted or reinserted into society, with the knowledge that they will be welcomed and can feel useful there.

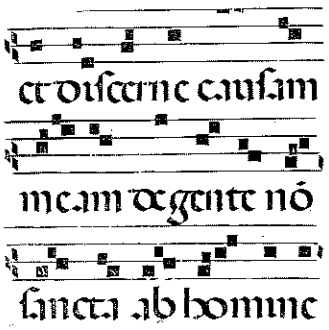
To humanize medicine in the footsteps of Christ is to glorify with Him the Living God, who wished man to have " Life in all its fullness. " This glorification of God is our true greatness, as St. Ireneus says: *Gloria hominis Deus*-the Glory of man is God.

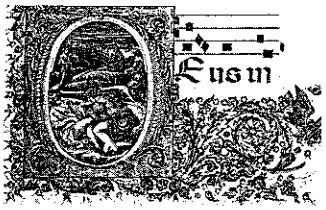
Cardinal PAUL ZOUNGRANA
Archbishop of Ouagadougou (Burkina Faso)

First Session



Life and the Right to Life





Remarks by the President of the Session

Professor Bergström pointed out that at a bioethical meeting held in Canada the preceding spring emphasis had been placed on the need to establish ethics committees wherever research was being conducted on human beings. Informed consent had also been insisted upon for clinical trials, and it was felt that some form of compensation must be instituted for certain cases in which there was unavoidable harm to patients.

The President of this initial session then presented a series of slides showing how in developing countries 50% of deaths involved children under the age of five; more than half of mankind still has statistics similar to those of Sweden 200 years ago. Infant mortality remains extremely high outside the developed world. Deaths of mothers in childbirth are also numerous in developing countries. Even in industrialized nations there are, however, " pockets " of medical backwardness which demand attention.

In view of the magnitude of the problems facing us, Professor Bergström stressed, the concerted efforts of all concerned are required-not only medicine, but the Church, politicians, and many others. These demands form the context for discussion at the Conference.

Prof. SUNE BERGSTRÖM
Nobel Prize Winner in Physiology (Sweden) and Pontifical Academician

Respect for Human Nature in Medical Progress

Jérôme Lejeune

We observe now that development of technology has brought with it a rather queer change in the sense attached to words. Who would think of speaking about the morals of reproduction? Nowadays we say ethics. And even if the two words — Latin the one, Greek the other — have the same semantic value, they no longer cover the same content.

He who speaks of morals means that customs should conform to higher laws, while he who speaks of ethics implies that laws should conform to customs.

For 2000 years and even more medicine has been fighting against disease and death, but today some individuals say that this commitment can no longer be maintained. In the debates on respect for life or the elimination of patients, the most passionate and destructive rhetoric appears to prevail upon reason. A more terrible example than that at the Royaumont Abbey fourteen years ago was never seen.

A very imposing woman, authoritatively speaking on behalf of an association whose name she refused to reveal, declared: " We want to destroy Judeo-Christian civilization. To destroy it, we must destroy the family. To destroy the family, we must attack it in its feeblest rung, the not-yet-born child. Hence, we are pro abortion. "

I am quoting by heart because not one of the journalists attending the meeting — about fifty — related this tirade. But these few words reveal why the discussions on this subject always taste bitter.

Obviously, some opinion manipulators avail themselves of technical subjects and use them as anti-Christian weapons, whether the question regards the artificial fabrication of human beings *in vitro*, or the deliberate elimination of very young or very sick or very old subjects. They know that all depreciation of human nature is a blow dealt to Faith. In his books *Dr. Bernard Nathanson*, who has become today a fervent advocate of life, reveals the strategy invented by the small group that made America abort. Realizing that for every Catholic " abortion and infanticide are abominable crimes, " they decided never to frontally attack the Church, but always to lay the blame on " hierarchy, " represented as a hostile, anonymous power. Through this strategy they thought that they would succeed in alienating a certain number of individuals from, and exciting them against, their Bishops: if the pastor is menaced, will the flock perhaps be dispersed?

The spectre of a science presented as gagged by obsolete morals will be waved before your eyes; the tyrannic banner of unbridled experimentation will be raised against you.... Never fear, in the end life will always be triumphant.

The Transmission Of Life

The story of life is very long, but for all of us the starting point is very precise: the moment of conception. Children are joined to their parents by a material link, the long DNA molecule on which all the genetic information is inscribed in an unbelievably miniaturized language. If we assembled all the coded molecules which specify all the genetic qualities of each one of the five billion men who will take our place on this planet, the entire mass would easily fit onto a thimble. In the head of a spermatozoon there is DNA, broken into 23 parts. Each of them is minutely coiled in a spiral to form small sticks which can clearly be seen under a normal microscope, the chromosomes. As soon as the spermatozoid has perforated the pellucid area, a real plastic bag where the ovum is wrapped, the membrane becomes suddenly impenetrable to any other reproducing cell. In merely operational terms this tight locking confirms that as soon as the 23 paternal chromosomes brought by the spermatozoid and the 23 maternal

ones borne by the ovum are reunited, all the information which is necessary and sufficient in order to establish the genetic constitution of the new human being finds itself assembled.

At the very beginning of life, soul and body, spirit and matter are so strictly intertwined that to define the way in which an idea comes to our mind or a human being comes to life we use the same word. The child and the idea are first of all conceived: the life of the body and that of the spirit need first of all a conception.

The fact that the child subsequently develops for nine months in its mother's womb in no way modifies its human condition: at the beginning there is a message; then that life is a human life.

Owing to the fact that venereal diseases and other pathologic conditions may obstruct the Fallopian tubes (where the meeting of the spermatozoid and the ovum normally takes place), it was recently proposed to overcome this obstacle by a delicate but minimal surgical intervention: a ripe ovum is take from the ovary and put in a vial; the addition of the spermatozoid brings about fecundation.

A few days later the tiny embryo of about one millimeter and a half, which feverishly organizes itself within the pellucid area, may be transferred into the mother's uterus. If the first " engineers, " Drs. Edwards and Steptoe, ran the risk of transferring the very small Louise Brown, the first baby conceived by extra-corporal fertilization, into Brown's uterus, it was because all genetics and all biology assured them that this small being was neither a tumor nor a parasite but undoubtedly a human being, wonderfully young, but the real child of Mr. and Mrs. Brown.

With thousands of babies already conceived in this way, to state that the human being starts from its conception is an experimental fact.

Protected by its survival capsule (the pellucid area first, and then the amniotic bag membranes in which it subsequently wraps itself), the extremely young human being is exactly as viable and autonomous as an astronaut on the moon: the vital fluids must be supplied by the vessel-mother. Up to now we do not possess an artificial distributor of fluids: home and food must be supplied by the human body. Complete growth *in vitro*, ectogenesis, so common in lower creatures, is not for the time being realizable for our species.

Biological pornography

To express duration by a watch and heat by a thermometer we use the same Latin root, time and temperature. These two notions are in fact strictly linked because temperature is a statistical measurement of the particles' agitation and this disorderly movement is the very definition of the elapsing of time. Cooling slows down agitation and local time flows less quickly. Near to absolute zero time seems to come to a real stop.

The extraordinary viability of spermatozoids and also of very young embryos enables them to stand the most severe cold and thus be preserved, so to speak, in suspended time. Hence the sperm banks, greatly used in veterinary medicine, and the possibility of human embryo banks, which some individuals dream of exploiting.

To discuss here all the proposed modalities, starting from maintaining in preservation products of a guaranteed quality, up to their transfer (after heating) into on-hire or second-hand uteri, would be quite out of place. Complaisant descriptions fill up the papers with real biological pornography. Artificial twins are even taken into consideration, both to test the genetic qualities of the " double " so sacrificed, and to preserve it as a stock of spare parts in view of a possible replacement of organs.

In less sophisticated terms, " surrogate mothers " are greatly in fashion; this production of adulterine babies through a medically teleguided syringe is really quite a strange modern sort of prudery. And the sale, nine months later, of her child by its biological mother is even more aberrant!

In several countries a campaign is now under way to claim the right to experiment on human embryos. Just like abortionists, the promoters of experimentation on man noisily claim that, in the name of democracy, Catholics have no right to impose their morals on others. Very queer reasoning, really, inasmuch as it pretends to prevent a given category of citizens from having their own say while democracy exists only if citizens can freely express their opinion by a vote.

Respect for human nature

The phrase " human nature " is not much in fashion in our days. This does not prevent human nature from existing. The chromosomes of anthropoids roughly resemble those of man, but certain peculiarities are typical of every single species. Just a quick look through the microscope allows us easily to distinguish chromosomes of a chimpanzee from those of a gorilla or an orang-outang or, of course, a man. But examination under a microscope is not even absolutely necessary.

In every town, two very interesting places deserve to be visited: the university campus and the zoo.

We sometimes see in the universities eminent specialists seriously wonder if, in their first youth, their own children were not, after all, animals. But up to now we have never seen chimpanzees in zoos wonder if one day their children will be university people! The only possible conclusion is that a real difference does exist!

And this difference becomes manifest when reproduction is in question. As far as we can imagine their psychology, chimpanzees have sexual im-

pulses which, in a way, can be compared to ours. But the shrewdest of chimpanzees will never be able to understand that there is a causal correlation between copulation and the appearance of a small chimpanzee about nine months later.

Man is the only creature who has always known that love and procreation are linked by nature. Did not the ancients represent amorous passion with the features of a child?

This knowledge grants dignity to the reproduction behavior of our species. It is not natural to dissociate carnal love from procreation, but it is fully conformable to apply the laws of nature for the control of procreation; hence continuous chastity in celibacy and periodic abstention in marriage.

In short, toxic contraception, which is to make love without making the baby; extra-corporal fecundation, which is to make the baby without making love; pornography, which is to unmake love; abortion, which is to unmake the baby; and deliberate euthanasia, which is to unmake all together, both baby and love, are practices incompatible with respect for the nature of man.

At the very beginning of existence, from the moment of conception, human nature is there. It is nature which teaches us that the embryo is neither perishable material that we may freeze and defreeze at will nor a consumable good to be sold or traded nor an experimental object nor a stock of spare parts. From its most tender youth, the human embryo is a full member of our species and must be protected against any exploitation whatsoever.

Bud does not this respect for human nature impose new taboos, and does it not threaten, to speak frankly, to seriously hinder research? To this often asked question (cunning dialectics never loses its rights) the answer is clear: absolutely not. To understand the reason for this answer, let us examine two issues: the fight against sterility and that against genetic diseases.

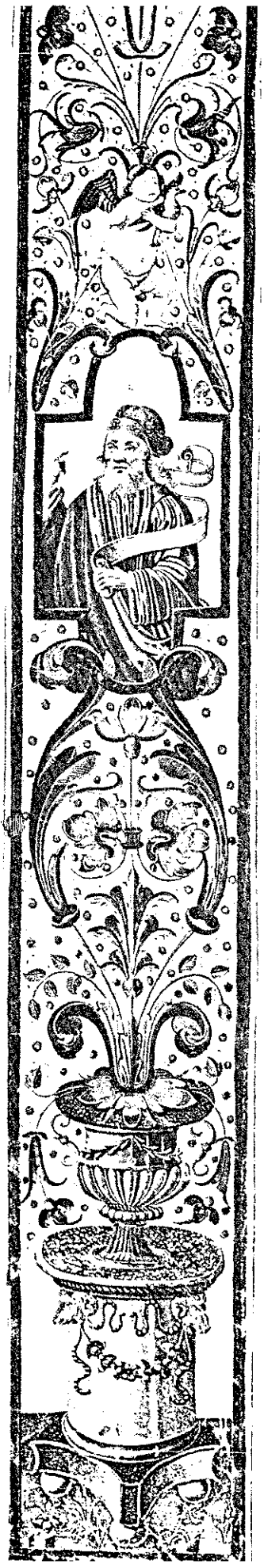
Sterility of the couple

The conjugal act is the only natural way to deposit male reproductive cells into the female body, by the union of two persons. This physical union, which is the only one capable of making valid and final the commitment between the persons, is an act desired and sought by husband and wife. The fecundation of the ovum by the spermatozoid will possibly take place some hours later, but the union of the reproductive cells is a consequence of corporal physiology and does not depend any longer on the conscious and deliberate control of the couple.

There is thus a difference in nature between the introduction of male gametes through the union of the persons — the specific act of love — and the union of the gametes, the act of fecundation, at the cellular level. It follows that, if the technician replaces the husband in bringing in the gametes, he accomplishes, by the syringe, the act naturally reserved for the union of the married couple. In this sense, there is a *substitutio personarum*.

When, however, the technician suppresses the obstacle which prevented the union of the reproductive cells or removes the hormonal or other difficulty which disturbed fecundation, what we have is *adjutorium naturae*.

This purely operational distinction berween the two possibilities of action (strictly in conformity with the doctrines set forth in the instruction *Donum Vitae*) is in no way academic May I be allowed to quote on this matter the slightly shocking, but greatly enlightening, remark of a woman who had just been submitted to the transfer of her embryo, after extracorporal fecundation. The anaesthetist, the gynaecologist, and the biologist had just operated in a quite respectful atmosphere, enlivened by sweet music. A few minutes later, the fu-



ture mother, to her anxious husband, who asked her how it had gone, responded, " I made love with the three of them. " This repartee, which perhaps challenges respectability, is a realistic description of the previously mentioned *substitutio personarum*, which only a woman could discover.

It remains to be observed that the consequences for the embryo of extra corporal fecundation are to be feared. The technician who nurses it for two or three days or keeps it frozen for years is actually the only one to have effective paternal authority over the child. Hence the risks of exploitation previously recalled and all the wicked uses already imagined or to be imagined. The baby conceived *in corpore materno*, on the contrary, is protected from all these dangers by the very place of its conception. The maternal womb is not only a sanctuary incomparably better equipped both chemically and physiologically than the best operating laboratory, but this secret temple is perhaps the only place really worthy of the coming into the world of a new human being called straight off to eternity.

If I may be allowed to advance an opinion, I would say that the long, roundabout process outside the maternal body involved in extracorporal fecundation is not at all a favorable solution and that, in a rather near future, thanks to progress in assisting nature, it will be considered an undesirable and not at all necessary complication. Two lines of thought and action will gain ground: one will cure sterility (by " plastics, " transplants, biological genius, and who knows what else); the other will insist on fecundation outside the woman's body, but its avowed purpose will no longer be the fight against infertility but arbitrary domination of man's destiny.

Genetic diseases

Amniocentesis, chorionic biopsy, and modern devices allow early detection of certain anomalies. The declared purpose of these practices is elimination of recognized sick children. We must not forget that in almost every country the elimination of children defined as abnormal has spurred the launching of campaigns in favor of abortion: the battalion of wretched, mishapen children was paraded to open the breach to the elimination of undesired, unloved babies!

Health by death is the abortion of medicine. All history demonstrates to us that those who delivered mankind from plague and rage were not those who burned the plague-stricken in their houses or suffocated rabies victims between two mattresses. It is disease which has to be defeated and not the patient who must be attacked.

Two years ago the British Parliament discussed a bill aimed at protecting the human embryo from every exploitation. At that time, in fact, certain experimenters claimed the right to use embryos conceived *in vitro* up to the 14th day of their life. They maintained that this authorization would enable them to better understand, even cure, several dreadful maladies, including mucoviscidosis, muscular dystrophy, hemophilia, and trisomy 21.

And still it was obvious that lung pathology, muscular physiology, blood coagulation, or brain functioning could not be studied in embryos fourteen days old, whose lungs, muscles, blood, and brain are not yet differentiated.

Moreover, no protocol can demostrate that it would not be possible to carry out these investigations in *anima vili* and that trials on members of our species are technically necessary.

However, this hunger for human flesh prevailed in the long-civilized countries, which abolished by decree what for 2000 years and more had been the oath constatly made by all the masters of medicine: " I shall not procure poison, nor shall I suggest its use, and I shall not

procure abortive means." The life of the very young human being no longer has any value, while, on the contrary, the embryo of a chimpanzee is always very expensive: after all, one has to support the cost of breeding.

In two years the progress of molecular biology allowed us to isolate the genes of mucoviscidosis, muscolar dystrophy, Huntingon's chorea, and retinoblastoma without the sacrifice, to this end, of even one human embryo. Very small removals on consenting patients were sufficient to make possible all the necessary investigations.

No major discoveries of medicine — including those of the last two years — have violated respect for human nature.

As to the antihemophilic factor, which allows patients to live a normal life, bacteria skill fully modified through genetic genius will soon abundantly supply it, thus eliminating the last risk of AIDS transmission by contaminated blood products.

AIDS, moreover, is an example of the so-called scientific predictions difficulty. As far as can be stated, no genetician, no immunologist had ever foreseen the existence of a virus able to demolish the body's defenses, but characterized by such great fragility that only intravenous or intrarectal injections may ensure its dissemination. Transmission against nature, by exchange of syringes among drug addicts or sodomy among homosexuals, had never been foreseen in any epidemiology treatise.

Research on the diseases of intelligence, particularly trisomy 21, goes on, and patients, whatever their age, have no reason to fear any lack of respect by researchers.

These remarks in no way mean that all the diseases I mentioned have now been defeated. More simply, they allow us to state, on the basis of the most ancient as well as most recent experience, that respect for human nature does not hinder but, on the contrary, stimulates progress.

Promoters of abortion or eugenic euthanasia and partisans of the exploitation of human embryos thought they could corner Catholic physicians, obliging them to face a cruel dilemma: either you take part with us in this mission of research and destruction — and you participate in the Massacre of the Innocents — or you refuse to relieve the anguish of the families fearing the charge of an incurable patient and you wash your hands of it. No, medicine is not compelled to choose between two awful roles, those of Herod and Pontius Pilate.

Victory over disease is possible, and even if I have not the gift of prophecy, of one thing I am absolutely certain: physicians respectful of life never give up and, *Deo juvante*, one day they will prevail.

Faust and Prometheus

If there is a question which haunts man's reflection, it is that of the atomic perils. The Pontifical Academy has repeatedly shown concern for this dreadful danger.

The terrible and marvelous Promethean spirit pushing us to steal fire from heaven conferred upon our generation a power out of proportion to our poor prudence. By forging, through strokes of genius, terrifying weapons capable of destroying civilization, Tubalcain's sons jeopardized the whole of mankind.

But, through a strange renouncement, some of the sons of Aesculapius, whose only mission was to protect life, seem today to change sides: to eliminate the diseased, to indict the innocent, or to exploit the feeblest, and to arrogate only to themselves the power of maneuvering the human being. All this may be a less noisy and blinding danger than that of atomic weapons but it is perhaps a more powerful bomb to

destroy the last moral defenses of our society.

Faust, who was the first, even if in a dream, to fabricate a homunculus in a bottle and who, owing to Mephistophele's magic, built up a world without love and without God, and Prometheus, who was the first to steal lightning in order to deliver to his successors the energy which makes the sun shine—these two figures are not only poetical fictions, but are today two aspects of a frightening power which may be bestowed on us by a science devoid of conscience, the ultimate temptation of absolute pride.

As much as, and perhaps even more than, nuclear physicists, physicians and health professionals need a new evangelization. It is actually very simple: we know, owing to the painful experience of nuclear explosion and experimentation on man, that *science by itself cannot save this world*.

In all the moral issues raised by the possible applications of science, passionate rhetoric and cunning dialectic will almost always succeed in changing (by clever make-up) the face of truth. Ethics Committees will solemnly issue their contradictory oracles without removing the real menace; techniques are cumulative, wisdom is not.

But one phrase, and only one, will dictate our behavior: the statement which does not deceive and, furthermore, judges everything, the very word of Jesus: " What you did to one of the least of these my brethren you did to me. "

If the theorists of physics and the practitioners of biology remember this sentence, the most powerful techniques will remain at the service of the family of man. But if they forget it, then everything may be feared from an unnatural science.

Prof. JERÔME LEJEUNE
Pontifical Academician, Professor of Fundamental Genetics at the University of Paris

Science in the Presence of Life

Giovanni Battista Marini Bettolo

Introduction

In all cultures, from the beginning of history, the problem of life and of life processes in general has constituted a question, a challenge, and a goal — first for the philosopher, later for the scientist.

The world surrounding us presents a very great variety of life forms, from unicellular microorganisms to the higher plants, the animals, and man himself, all of them characterized by a cycle which commences and, according to the species and environment, concludes with death.

Science, it may be said, has in recent years deepened its knowledge of all the mechanisms by which life functions in the various living beings. In molecular biology it has sought to define the simplest cell as a complex system which could even be subjected to a reassembling of its chemical and morphological components. It has studied the energy mechanisms ensuring its functioning, but up to now, while maneuvering molecules, it has not succeeded in creating life autonomous of this cell. All of science still cannot do as much as the little seed of a plant which, when placed in the ground, gives us a tree.

The dream of creating life has always been the desire and commitment of the learned and has also attracted the fantasies of dreamers and poets.

Another aspect of life has engaged and engages science. Beyond biblical schematization, current cosmological and paleontological knowledge indicates that our planet — not to mention all the others in the universe originating from a cosmic phenomenon — over the ages has changed from a formless mass of incandescent radioactive material into a planet surrounded by an atmosphere that is relatively temperate — i.e., under conditions which ensure life, as we can conceive it, from an energy and thermodynamic standpoint as well. It would in fact be impossible for all the living beings on earth — constituted by chemical substances such as proteins — to exist beyond certain limits of temperature and pressure.

Today there is a desire to explain the origin of life on earth with a series of sequences represented by chemical reactions which have been confirmed experimentally only to a very small degree, and in spite of their ingeniousness they leave enormous gaps which cannot be filled easily even on the basis of our current knowledge.

Science is probing into the appearance of life forms on earth whose traces as discovered by paleontologists show us the wealth and variety and number of past and present living species.

This is a second challenge to science to demonstrate the origin of this life — aside from every implication of creation — a life which, as I stated, is linked to the quality and conditions of the environment and, above all, of the fundamental parameters — temperature and pressure — and the presence of oxygen in the atmosphere making possible an energy cycle of the living beings — with the exception of autotrophic microorganisms — which is quite precise and highly defined.

These are the great questions of science involving the problems of life, and if we were to enter into this study, I think we would get too far away from the subject and purpose of this meeting, which is the humanization of medicine, that is, the problem of man's life.

Medicine and Man

Man's health has been the first concern of human society since ancient times — to mitigate pain and eliminate illness. Medical precepts, therapy, and diagnostic methods as well are found in all civilizations, even the most primitive ones.

All civilizations, including, as appears from recent studies, the most primitive populations, have as their basis respect for

the human person, or rather, the " sacredness " of the human person.

If we have knowledge of complex human nature, wherein body and soul, the transcendent and the material, are joined, we must not forget that non-Christians and nonbelievers also have a concept of sacredness and utter respect for the human person. In this regard, let us recall the taboos of primitive populations as protection of the human person and defense of the species. Today the immense development of biological science and the applications of experimental medicine in recent years have posed a series of problems deeply affecting the field of ethics as regards the use of scientific discoveries.

If this problem is today of current interest and very much alive — as is demonstrated by the concern and anxiety of scientists, believers, and nonbelievers in the face of moral problems posed by new discoveries, operating techniques, biomedical technologies, like those involving machines ensuring survival for persons with only a vegetative life, organ transplants, extracorporeal fertilization, with all its implications, genetic manipulations (even if only for the praiseworthy purpose of combating hereditary illnesses), clinical experimentation on man, or even surgical experimentation — it was in the past as well.

It would be hard for us to express better today the concept of life and its sacredness than with the words of Louis Pasteur pronounced in 1882, a little over a hundred years ago, when he stated,

" En chacun de nous il y a deux hommes: le savant, celui qui a fait table rase, qui, par l'observation, l'experimentation et le raisonnement veut s'élever à la connaissance de la nature, et puis l'homme de sentiment, l'homme qui pleure ses enfants qui ne sont plus, qui ne peut, hèlas, prouver qu'il les reverra, mais qui le croit e l'espère, qui ne veut pas mourir comme meurt un vibrion, qui se dit que la force qui est en lui se transformera. Les deux domaines sont distincts, et malheur à celui qui veut les faire empiéter l'un sur l'autre, dana l'état si imparfait des connaissances humaines "

Science and the Human Person

Current confusion on the limits of science as regards the human person, who should be respected in his rights and in his sacredness, is perhaps due to insufficient philosophical concepts or, rather, the present mentality concerning certain definitions essential for comprehending the problem of life.

If we closely examine what is now being said, written, and proclaimed in interviews and the mass media, we are necessarily left disconcerted in the face of existing confusion on some essential concepts.

Today we no longer know with certainty what ethics is; having been defined as the natural morality in which Judeo-Christian morality was grounded, it has become a relative concept varying in the course of time, and, as a result, strictly speaking we no longer have a clear notion of *good* and *evil*.

We are not clear about what is meant by *science*, often confusing basic science — i.e., research on principles, the investigation of the truth — with repetitive experimentation.

Nor are we certain about the concept of *man* when we limit our considerations to *thinking and active man*, frequently failing to take into account man in the state of becoming, *in fieri*, the embryo, and sometimes the fetus as well.

This confusion is largely due to the fact that scientific progress has been so rapid that there has not been time to develop adequately a body of thought and doctrine bringing this progress back to human values.

It is necessary for each of us to appeal to the sense of good and evil deep within us to rediscover those dimensions of humanity without which science and its applications — the highest products of the human intellect — simply become destructive and negative for man himself.

With these considerations, it should be made clear, I am not expressing the desire to set a limit for science and research. The applications of acquired knowledge, however, should be subject to discipline when they go against the dignity of the human person or are transformed into means of abuse and destruction.

The freedom of choice left to the scientist imposes the need for decisions which do not go against man, establishing a limit for the applications of scientific knowledge, but never for the investigation of the truth along this unending road of humanity to knowledge and progress.

This moment we are passing through requires that science not lose the notion of human values in its speedy, inexorable advance so that it will not be transformed into an instrument of self-destruction.

It is necessary at this time for men of science to devote themselves to constructing a new culture bearing in mind that in the development of thought and science man must preserve his centrality in the midst of thought, nature, and knowledge in a harmonious vision allowing for society's development and progress while committing his energies to meeting the great challenges of a growing humanity bursting out over an earth with limited resources.

The experiences with human beings of recent years, while representing a conquest of great value by biological technologies, must be rigorously overseen by ethics in respect for the human personality.

In the most delicate question of determining the exact moment of death — a problem which has become real with the possibility of employing equipment ensuring biological survival even in those persons who have lost all cerebral activity regulating vital functions — science has made available to moralists and jurists meeting together with physicians on ethics committees all the elements needed to establish with absolute certainty the moment of death with a series of sure physiological parameters which have today been accepted as valid and adopted — in complete respect for the human person. Increasingly perfected equipment has been produced permitting artificial vegetative life. Science has in fact created a new problematic regarding long-term survival, and here, in ensuring biological survival, it must halt before respect for the human personality, allowing the dignity of death.

These machines were really created to overcome serious pathological states resulting from accidents and collapses, enabling the patient to surmount the crisis in order to restore him to normal activity — not to perpetuate a state of irreversible coma.

In the face of the mystery of death, science, even while struggling for life, cannot go beyond certain limits — as, for example, in therapeutical obstinacy — of what is reasonable and permissible, withdrawing before the natural course of events.

On the other hand, the scientist must never favor the practice of euthanasia, even with the patient's consent, for the life of each man is a good for all and no one has the power or right to do so in the framework of a natural ethic.

In recent years, with the discovery of the basic laws of molecular biology at the root of modern genetics, science has acquired a body of information better enabling man to dominate nature. The knowledge required to act at the level of the genome of the higher animals and man is still distant at present, but, since all the fundamental mechanisms are known, it is certainly probable that in a few years we shall know the exact structure of the genome and be able to act upon this system — on the causes of serious genetic illnesses, for example; but the availability of the knowledge acquired will also enable it to be used to modify man in a negative sense.

Science may be in a position to modify microorganisms, plants, animals, and the human species, with its store of biological qualities, but might also modify the brain, where the meeting place of matter and spirit constituting the basis for the human personality is manifested in a more evident way.

In the face of these possibilities now in prospect on a collision course with man's future and position on the earth, science cannot proceed outside an ethical framework of respect for the human values which have guided the evolution of man.

This state of development of biotechnologies is still remote — what may be carried out easily in a bacterium is clearly not applicable on an animal level, much less a human one. But science, starting today, must grasp the problem on the verge of appearing and assure man that its conquests are only for his good. The most troubling aspect today, however, concerns the progress made by science in the field of embryology and everything resulting from it, from artificial to extracorporeal fertilization, the possibility of preserving embryos for years at a low temperature, and the indiscriminate transplanting of organs.

On the other hand, there is the problem of family planning, i.e., birth control, on which socioeconomic development policy hinges in some countries, such as China and India. This also represents a strain on nature, effected with means resulting from scientific discoveries, still an object of study and research, with enor-

mous biological experimentation on man.

A set of questions beyond all creeds pervades the scientists engaged — in every country, it may be said — in resolving this anguishing problem of our humanity, with means and systems which may or may not be natural

Here again we may fall into the thicket of definitions. What does " natural " mean? Is a hormone administered " natural " or not? A definition hard to establish from a strictly scientific standpoint. Even the use of pharmaceuticals like antibiotics or vaccines enabling us to save lives and protect millions of children would not be natural, but no one doubts that they are licit. It is true also that in the case of birth control science is ethically faced with a great dilemma when it seeks to prevent life or even to impede life's emergence.

Magisterium of the Church

In view of the perplexity and indecision manifested in this field among numerous scientists, physicians, jurists, moralists, and biologists, so-called ethics committees have met to discuss and clarify problems which may disturb individual conscience. The thought of the Magisterium and the Church's warning on this point are quite clear. The Church has offered her indications and guidance on every occasion. I shall refer to Paul VI's appeal on the value of science for the human person. In his address of April 23, 1966 to the Pontifical Academy of Sciences Paul VI exclaimed, " How many wonders there are in the anatomy and physiology of the human body! Why man? Here science grows mute and must; it would otherwise go beyond its field. It halts before the decisive questions: What are we? Where do we come from? Where are we going?

" Science is not self-sufficient and is not its own end. Science exists in relation to man and for man. "

Science is man's handmaiden and must work only for man's good. Otherwise, it becomes sterile, useless, and harmful. The Pope goes on to say, " The upright scientist cannot fail to ask himself questions when faced with the results of his discoveries on that psychophysiological complex represented by the human person. " And he asks, " Is everything permitted? Can applied science abstract from a norm of morality, moving unrestrainedly beyond good and evil? Who fails to see the aberrations to which some might devote themselves in the name of science? "

It is a forceful reminder for all those engaged in such research. It is not only a matter of performing science, but of acting " in the name of science, " for experiences resulting from transpositions or repetitions of knowledge are often involved.

Paul VI at this point reminds us of the need for science not to be merely agnostic towards moral problems presented by its applications, but capable of making a positive contribution which he defines as the *charity of knowledge*.

In his Pontifical Academy address to a group of biologists on October 23, 1982, John Paul II deals with the subject of science's respect for the human person, stating, " I have full confidence in the world scientific community's carrying out biological research and making progress with continuous full respect for the moral norms protecting men's dignity, their liberty and equality. " And, after having affirmed the importance of joining science to wisdom in these problems, he tells us, " For you, man is the final end of scientific research, the whole man, spirit and body, though the immediate object of the science you profess is the body in all its organs and tissues. The body of man cannot be separated from the spirit, just as the spirit cannot be separated from the body as a result of the deep unity and mutual interference existing between the two. "

And after having affirmed the indissoluble union of body and spirit and the importance of the sciences studying " corporeal reality and activity, " after having stressed that he feels no apprehension over biological experimentation carried out by scientists with respect for the human person because they are concerned with man's integral well-being, he asserts, " I must, on the other hand, most explicitly and formally condemn experimental manipulations of the human embryo, since the human being, from his conception to his death, can never be made an instrument for any purpose. "

As regards the self-discipline established in different parts of the world, the Holy Father says, " I praise those who have sought to establish the rules and limits for experimental interventions on man, with full respect for his dignity and freedom. "

Science, by continually acquiring new notions on nature and the extremely delicate multiple mechanisms regulating the *human body*, can place anyone with experimental capacity in a position to effect the most audacious experiments, which may be directed towards saving man and future generations *or* towards creating situations contrary to all ethical principles.

It is thus indispensable, in my view, for the development of scientific research and its applications to be guided exclusively and continuously by a lofty moral sense whose end is respect for man and his life, the most wonderful and mysterious expression in all creation.

Science must be humanized in the face of suffering man and associate itself with wisdom so as not to produce cases of abandonment which, even in hopeless situations, would amount to a form of euthanasia.

If science is investigation of truth and is thus neutral, not involved in the use and application of the principles it has di-

scovered, the scientist must be the one to discern the sacredness of the human person on the basis of the principles of natural ethics — and in the case of believers, of religious ethics as well.

The possibilities offered by modern biomedical technologies must not in fact exceed the limits defining respect for the human person, human life, which, as life, also presumes death.

But here it is not science which is involved, but the will of man, of the physician, who, with the most refined instruments at his disposal, must have the sensitivity to use them with respect for human life and the patient's personality.

Faced with the expansion of a medical science involving increasingly perfected technicism making possible audacious aberrations, often losing a sense of the measure of what is licit, and regarding the ill as objects, highly perfected, complex machines, let us recall that the human personality possesses a transcendental component constituting the *self*, which demands not only respect, but also affection and human warmth and that fraternal spirit thrusting Francis into the arms of the leper at the gate of Assisi, that sentiment of sacrifice which in the period of his conversion moved Edward Gemelli to kiss the volunteer dying at the military hospital in a sublime impulse of charity and fraternity.

And in this instance of science facing the mystery of death — regarding which a great scientist, to whom we owe a large part of contemporary civilization, has stated, " Only unlimited faith in God enables us to bear it " — science must yield.

In his fight for life the physician, up against the inevitability of the passing he has combatted with science and charity, must recall the invocation of the Saint of Assisi: " Praised be my Lord for our sister bodily Death, from whom no living man can escape. "

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Scientists: Servants, Not Masters of Life

Ernest Friedrich Pfeiffer

Introduction

When receiving the invitation of Archbishop Angelini, to talk on " Scientists: Servants, Not Masters of Life, " I immediately recalled the old narrative of Dr. Faustus, who sold his soul to the devil to obtain magic domination over the world and the human beings living in it.

When we realize the highlights of modern technical culture, to use that expression of *Snow*, undoubtedly great deeds in a literally Faustic sense were recorded in our times: space-travel to the moon, the fission of the indivisible atomic nucleus followed by the chain-reaction eventually leading to the direct invasion of the divine domain of the *Creation* by manipulation of the genome via molecular biology or genetics. Homunculus lies ahead

Natural Science, Medicine, and the " Right to Life "

For the physician and especially the clinician, who is really *treating* patients — and not only discussing medicine— the temptation to see oneself as " Master of Life " is much less felt than might be true for the physicist or chemist.

There is nearly no day where the bounds of his professional capacity do not become obvious, no day without the premature death of one of his patients, premature because this client had to die before the fulfillment of his personal biological clock. Various factors are responsible for this continuous failing. Perhaps there was simply no therapy available, as in the case of most malign diseases, or the physician missed the time when successful therapy would still have been possible, as in the case of progressive arteriosclerosis, and so forth.

All these suffering human beings were not permitted to excecute their " Right to Life " until the irrevocable end. Since *Alexis Carrel* we have set that date for the case of the human being at 52 cell-divisions or 115-120 years. So far, we haven't started as yet to define the reasons for that limit in biological terms to say nothing of influencing those bounds. In spite of the topics of many conferences, and the designation of chairs at universities, *true* gerontology does not exist yet, i.e. the knowledge of causes and therapy of the physiologic or pathologic changes of age.

A short review might give us the reason why this is so. Doctors who might be called scientists in the modern meaning did not exist until the beginning of the 19th century, when clinical observation and empirical therapy were replaced by systematic studies of tissue changes by means of the microscope, and the application of *Liebig's* organic chemistry for detached diagnostic and therapeutic procedures. Even the renaissance of the magical conception of antiquity and the Middle-Ages in the guise of *Naturphilosophie* or romanticism, did not halt the breakthroughs of the rationally controlled modern medicine of our days.

Now, the " Right to Life " was granted to millions in that they no longer died at the beginning or at the height of their lives of the plague, smallpox, thyphoid fever, and cholera. On the contrary, even wars and their consequences, such as captivity, malnutrition, and forced emigration, were suffered by millions without *one* mass epidemic and widespread deaths. 300 years ago, at the end of the Thirty Years War the situation was different. Out of the 36 million inhabitants living in the Holy Roman Empire German Nation, only 12 million survived because of those diseases. Strict adherence to the biological laws of immunology and immunotherapy did beat the three figures in the famous allegorical painting of *Albrecht Dürer*, " Nobleman, Death, and Devil. "

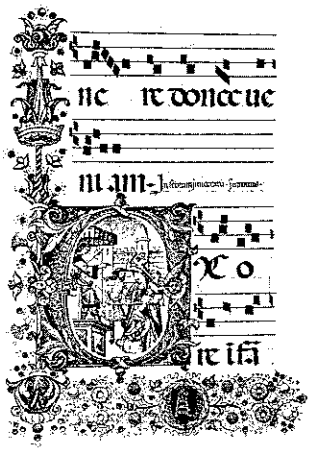
Those therapeutic principles are still valid now. After several decades of apparently successful chemotherapy of tropical disease, development of resis-

tance to chlorochinine in malaria, or of Trypanosoma Cruzi to various drugs as in Chagas-disease, demanded new ways. After biosynthesis of various core and surface proteins of Schistosoma in the case of Bilharziosis, or of plasmodium falciparum, causing malignant malaria, new vaccines became available, similar to the virus causing hepatitis B. The first time prophylaxis has been aimed at by preventive vaccination. In addition, the application of " gene probes " is used for rapid diagnosis. African sleeping illness is also attacked this way.

In the 20th century, on the other hand, the highlight of curative medicine was represented by the application of *Paul Ehrlich's* " Magic Bullet, " i.e., chemotherapy of infections by spirochaetes, cocci, and bacteria, as causes of syphilis, gonorrhoea, pneumonia, wound infections, scarlet fever, endocarditis and, eventually, tuberculosis. *Alexander Fleming's* penicillin changed the face of ill-reputed war-surgery within months. Open treatment of war wounds and early amputation fell into oblivion. The tuberculosis sanatoriums, the " Magic Mountains " of Davos in Switzerland, were converted into sport hotels for enjoying skiing in the course of further progress.

The changes of that period are best illustrated by the answer to the well known question: " If you were put ashore on a remote island for about 10 years and you were permitted only 3 drugs, what would you choose? " Irrespective of the answers in detail, any physician would certainly name penicillin and morphine.

Undoubtedly, all further progress of modern medicine ranges far behind the significance of the successful treatment of infectious diseases. Vaccination, chemotherapy, and antibiotics are the reasons for the ages of 70, 80, and 90 among politicians and scientists, cardinals and artists, but also of the common man in the



street. The number of centenarians has doubled in 50 years in Central Europe, and *Franke* was recently interviewing and examining in West Germany alone 570 of them. And, viceversa, the fall in the mortality of neonates and small children, the population explosion, especially in the Third World, the impending breakdown of the social insurance systems in Europe—all are the undesirable consequences of the beneficial progress of bio-medicine, aiming at the realization of the basic " Right to Life. "

In principle, the attack on the nucleus of medical research has just started. We have *begun* to learn about diseases caused by the combined factors of genetic information and individual reaction to the external environment. The knowledge of molecular biology and molecular genetics came just in time to understand the capacity for mutation after birth and the reaction to exogenous pathogenic factors. It will be possible, for the first time, to attack with the prospect of success the rigid field of clinical virology, not only the immunodeficiency viruses as causes of AIDS, but also others. In consequence, we expect fundamental progress in the understanding of oncogenesis and transplantation pathology. As in a complicated clockwork, one toothed wheel grasps the next, and through various interpositions apparently remote areas are activated. The increase in the number of diseases of the vascular system (" everybody is as old as his vessels ") - as well as the rise in malignant disorders is one of the sequelae. About 50 % of the population in our area is about to die from diseases of the heart and the vascular system, while cancer is causing the death of 24%. Of course, these figures were already valid before; however, they were never *experienced*.

Implications of the Progress of Modern Medicine upon Medical Ethics and the Role of the Scientist/Physician

That evolution has two important implications. *Firstly*, the role of the physician of the last centuries has drastically changed. The congenial Samaritan whose highest goal in life was to make pain tolerable, both psychologically and physically, changed into that combination of scientist and physician which is so difficult to fulfill and even more difficult to understand. That dichotomy between scientist and physician is not only behind the topic of this conference, it is also represented by the frequently asked question: " If you some day were hit by a very serious ailment, what would you prefer? The cool, competent physician, or the warm, friendly but incompetent doctor? " The further question is justified, of course, as to why the congenial type should always be incompetent.

Secondly, the classical subjects of medical ethics (*Illhardt* 1985), the situations at the *beginning of life, critical situations during life,* and the *end of life*, have become pointed and poignant to such a degree that endless discussions are inevitable. To these problems the problem resulting from medical research might be added.

It is impressive how the pledge of Hippocrates is valid today in the same sense as more than 2000 years ago, and also *Cicero's* saying for the medical profession: *Salus aegroti suprema lex*.

1. Beginning of Life

At the *beginning of life*, birth or population control, family planning or counselling, prenatal diagnosis, sterilization, and abortion comprise the challenges for the physician. Special " Centers for Reproduction " were founded 25 years ago when I was a visiting professor at the National Research Center in Cairo, Egypt. I had the privilege to see at the same time as patients the President of the State, *Gamal Abd El Nassr*, the highest Iman of the Islamic Church, *Schech Schaltout*, as well as the two patriarchs of the Coptic and the Greek-Orthodox Churches. All were concerned that higher food production expected from better irrigation after constructing the High Dam might not keep up with the hunger of the increasing population.

At present, the overwhelming majority of physicians around the world is opposed to active interruption, while the various methods to prevent pregnancy are taught. Any pressure of the State Authorities in this or the opposite direction might release avalanches, as was recently observed in India. The position of the Roman Catholic Church is clear: the separation of sexuality and fecundation is regarded as not natural. To this chain of problems we must add the contrary aspect, i.e. *artificial insemination*. The special interest of the media is concentrating, more than on the intracorporeal application of seminal fluid, on extracorporeal procedures. Here we distinguish between in vitro fertilization (IVF) and embryo transfer (ET).

For the scientist, all of these techniques are not new; they have been practiced by veterinarians for decades for improvement of cattle and sheep production. Most physicians take a conservative attitude. Experimentation with embryonic material is strictly disapproved. An American agency, United Family International, for " rented mothers, " was recently closed in Germany because of the national law on adoption.

Prenatal diagnosis for genetic counselling ranging from sonography up to transabdominal or transcervical Chorion Biopsy has created new problems. Various Trisomias, including the Down-Syndrome or Mongolism (as well as the Turner and Klinefelter Syndrome) might be recognized before birth. Recognition of the impending genetic disorder on the basis of chromosomal aberration is followed by the indication for abortion. This is very much like interruption for social selection. In practice the problem is not very substantial. About 100% of all tests are negative anyway. Most of the Trisomias have only a very limited expectation of life.

Whether or not this situation will be changed by the application of modern gene analysis methods, i.e., the construction of DNA-probes complementary to the defect regions of the genome (Southern Blotting), remains open to question. Until now, prenatal diagnosis of Sickle cell anaemia and Thalassaemia has been reported. In most of these disorders serious consideration of interruption seems by no means justified.

2. Crisis of Life and Critical Therapy

Successful treatment of formerly mortal infectious diseases and the development of " bioengineering " do permit the institution of new therapeutic measures in apparently hopeless situations. This particularly applies to *intensive* medicine, the use of *artificial organs, and organ transplantation*.

A. Intensive Medicine

Life-threatening situations affecting the cardiovascular system and respiration, water and electrolyte metabolism, diabetic Ketoacidosis, myocardial infarction, pulmonary embolism, cerebral infarction and haemorrhages, severe injuries, like polytraumatic or brain damage, burns and intoxications also after drug use or suicide can be overcome and many years of valuable life might ensue. Any negative option should answer the question about preferring the friendly, Samaritan-like physician and ecclesiastical consolation or the application of all modern methods to overcome the crisis in a touch-and-go situation.

On the other hand, it is here, where the critical *reproach* is made of the big hospital and especially the University hospital, that the humanistic relation between the physician and his patient is most seriously at stake.

Of course, this relationship suffers when the specialist is called (*Schölmerich 1987*). Frequently, the necessary invasive diagnostic and therapeutic procedures (e.g., heart catherization, coronary angiography, computer tomography, or endoscopy) cannot be effected by the physician responsible for the patient's admission. Very often this loss of personal medical advice, consolation, and understanding is unavoidable when satisfying the requirement of the smooth functioning of the technical apparatus in a

modern department of medicine or surgery.

It is also not possible for the physician to act only on the basis of the clear expression of the patient's will to live. Frequently, the patient was already unconscious when he was admitted.

It is also not possible to rely upon the relatives speaking on behalf of the patient. I never have heard a conscious patient asking seriously for termination of life, but rather frequently the relatives have asked for the end of the " suffering. " In principle, the situation in this obviously abnormal phase is the same as in normal life. The patient has to be accepted and respected as an individual, and the physician has to appreciate his physical and mental integrity as well as his dignity.

B. Artificial Organs and Organ Transplantation

The attempt to substitute the failing vital organ function by specially designed artificial organs and/or bio organ transplantation has been successful in only a few examples. Certainly, the development of the artificial kidney or hemodialysis more than three decades ago (including such variations as continuous peritoneal dialysis) not only paved the way, but also permitted the first successful transplantation of kidneys of healthy donors. When the biological organ failed, the artificial kidney took over. While at the beginning only the transplantation of kidneys of identical twins was performed with the expectation of permanent success, in recent years certain immunosuppressants like Cyclosporin have changed the picture. Today, in a normal University hospital, up to 100 kidneys per annum are transplanted with 80% early take, limited only by the lack of a sufficient number of kidney-donors. In an unprecedented international collaboration, *Eurotransplant* is overcoming the national frontiers, including the Iron Curtain, for exchanging organs and selecting appropriate donors for the organ-requiring recipients. Critical comments were raised recently when kidneys of anencephalic neonates were transplanted on infantile recipients (*Holzgreve et al 1987*), since a certain arbitrariness undoubtedly prevailed with regard to the determination of cerebral death in an individual lacking the cortical brain (*O'Rourke, 1987*). Similarly, so-called multi-organ explantation has produced new problems crossing the border line of ethical justification.

While the use of the artificial kidney and kidney transplantation has become routine and is providing an average survival time of 17 1/2 years in a clinical situation leading before to death within 6 months, *other* organ transplantations and the use of artificial organs are still in the experimental stage, or in early clinical trial. This holds true with regard to heart, liver, pancreas, lung, and the combination of heart and lung transplantation. Bone-marrow-transplantation as a life-saving measure for children suffering from leukemia requires close relatives as donors, or complicated techniques for permitting autologous stem cell transplantation to prevent special immunopathological consequences. There is only one artificial organ which, because of its electrophysical mechanism of action, might be transplanted for many years, the heart pace maker. Already in the case of the artificial pancreas, however, the glucose sensing mechanism working on an electrochemical basis in circulation or in the interstitial tissue requires constant contact with the body fluids to provide the necessary information on glucose content for the computer regulating the necessary amounts of insulin permanently infused. Here the problem of the defense reactions of the organism neutralizing the glucose sensor after days and weeks has not been overcome yet.

We also should realize that even successful organ transplantation in the life of the patient represents only an episode. A transplanted kidney has an average life expectancy of 3 to 6 years, although I recently presented a case of 12 years duration of successful kidney transplantation. On the other hand, the patient successfully receiving e transplant avoids 4-8 hours of hemodialysis 3 or more times per week or the risks of continuous intraperitoneal dialysis. The last 30 years certainly have brought the turning point in the field.

3. End of Life

The role of the physician at the *end of life* is much less decisive or dramatic than is generally supposed. He has to act as a mediator and consultant utilizing all methods facilitating this difficult period and preventing futile suffering. The doctor should encourage and console the patient and his relatives as well as possible. Only wise advice is needed. It is hard to define what futile prolongation of life means

I presume that active euthanasia as conceived by the Hippocratic Oath or as experienced in my country by State imposition is excluded. We never should forget that the arbitrary killing of a few psychiatric patients whose lives were regarded as " worthless " initiated that unbelievable period and the experiences leading later to the Holocaust of thousands and millions. We never should forget that the firm opposition of men of medicine and the Church, belonging to the few who knew of these early attempts, did produce a halt of the whole action. Unfortunately, only temporarily.

When support of dying is excluded, the active role of medicine is transferred to the passive position of the doctor who renounces the various methods available for life prolongation. *Illhardt* (1985) called this " termination of treatment. " This problem only

very rarely demands a " yes " or " no " decision. In general, the elderly patient suffering from a chronic disease is endangered by the addition of a compromised infection, e.g. pulmonary mycosis; he is more or less unconscious and requires artificial nutrition, and only the hospital setting can provide the necessary hygienic measures. Temperatures increase and the situation becomes worse.

This patient is not suffering in the normal sense of the word; active reanimation and treatment with the most expensive drugs will not change his fate either. After consultation with the relatives, and perhaps some specialist, only palliatives are ordered; the doctor and the minister collaborate.

This situation is different when an *acute* disease has led to clinical death, and reanimation is necessary. In this case, aid as rapid as possible is necessary. Only in a few cases are there conflicts involving reanimation and its possibilities, with the continuous treatment of an unconscious patient demonstrating basal functions solely with the help of all technology available, and the question of whether the situation should come to an end by terminating therapeutic efforts. This situation, including the legal consequences, has been discussed in detail in the medical, ethical, and juridical literature (cf. *Donstan* 1981).

The experienced physician, and not the many self-appointed experts not working in active medicine but only in the outlying regions, always will favor the " Sanctity of Life " (*Illhardt* 1980). He will condemn any attempt at euthanasia and will try to make death and dying tolerable.

The same holds true in the case of attempts at *suicide*. It is not up to the physician to fulfill the apparent decision of the patient to end his life by renouncing life-saving measures. In this case (and this is in accord with all experiences of therapy in critical situations), he should take all actions to revive the patient and to guide him out of his psychic and physical crisis.

4. Research

We turn, finally, to the situation of the physician/scientist in present and future research, both basic and applied. As far as *drug research* is concerned, reference is made to the 1st International Conference, held here in Vatican City, and organized by the Pontifical Commission for the Apostolate of Health Care Workers, which was devoted to " Drugs in the Service of Human Life. " Especially in the paper by *Elio Sgreccia* on " The Ethics of Drug Testing, " the subject was discussed in detail. Only one point should be mentioned, i.e. the *early* phase in introducing a new drug when experiments with animals in the laboratory will be followed by the first trials on healthy volunteers. From the point of view of ethics, this appears the most critical situation: no suffering patient can expect any beneficial effect from that new medicament, always a valid point for the philosophical and medical mind to justify. The only ethical basis is found in realizing that this phase is unavoidable. Up to now, there is no entirely satisfying solution in sight.

The other situation centers around molecular biology, particularly *gene therapy*. Ideally, this means removing *some* appropriate somatic cell from an individual suffering from the lack or the incapacity of his specialized tissue to manufacture precious biological compounds such as hormones of life saving significance, introducing by one or the other of the new techniques the gene regulating the production of this hormone or neutralizing the so-called " repressor gene " preventing the general somatic cell from acting like the specialized tissue, localized in the affected gland, and to introduce that " transfected " somatic cell in the suitable place in the organism of the suffering individual. In one of the recent papers devoted to that subject, this procedure was called " transcaryotic implantation "

because the term " transcaryotic " suggests that the nuclei of the implanted cells have been altered by the addition of DNA sequences by stable or transient transfection (Selden, Skoskiewicz, Russell, Goodman 1987).

This is so far a new technique, since the mechanical introduction of the DNA sequences desired is different from the former technique, which involved retrovirus-mediated genetic transformation of somatic cells, followed by transplantation of bone marrow into the livers of irradiated mice. In the only successful model of clinical importance for preventing the problem of immunological barrier, mice lacking any tissue reaction against foreign material were employed. Of course, as mentioned above, if the cells are derived from the patient to be implanted, any needs for immunosuppressive therapy disappear. In the model in question, experiments were performed with cultured fibroblastic cell lines, deficient in the thymidine kinase activity, producing insulin.

Undoubtedly, a number of obstacles still have to be overcome before using this technique, e.g., for the treatment of Diabetes. The appropriate somatic non-islet cell type must be found and manipulated, and the regulation of the insulin expression must be better understood than in the model used, where some diabetic mice died because of hypoglycemia. This implies that those specifically converted cells escape one of the basic laws of endocrinology, i.e. that the hormone secreted inhibits its own production and secretion. Moreover, it seems not justified to expect that an antibody, which now is held responsible for the destruction of the insulin-producing B-cell in the pancreatic gland in Type I Diabetes, will not attack the newly introduced insulin-producing somatic cell.

It is well understood and agreed that these types of experiments in genetic engineering are ethically justified only when somatic cells are used. Germ-line therapy is not to be tried and effected in human subjects. This undoubtedly would involve the danger of changing subsequent generations of human beings, and the long-term effects could not be foreseen. With somatic-cell therapy, the situation is very different, since only the individual treated with his own transfected cell material will be subjected to that kind of treatment.

IV Conclusions and Summary

It is an easy burden for the clinician to see the scientist as a " servant " and not as a " master of life. " Only exceptionally are his successes predictable, and even more rarely may be attributed to his planning or original creativity. When confronted with critical situations, he might be able to provide the " Right to Life " for his patient; then he can claim his highest reward. He can only defend it, never take it for granted.

The medical sciences have just started to detach themselves from complete dependence on mortal infections and epidemics and to investigate the basic causes and reasons for pathological changes in the organism. Molecular biology and genetics have just begun with real research in the fields of gerontology and pathology, arteriosclerosis, oncology, and virology. The limitations of our knowledge and capacity became obvious, however, when confronted with the immune deficiency disease AIDS, of apparently medieval character. This prevents the slightest trace of arrogance.

For the physician, the " Right to Life " of his patients has absolute priority. The patient's confidence in his physician must be protected under all circumstances, at the beginning of life, in all critical situations during life, and at the end of life. This law also governs research and therapy, development of medicaments, and their application. In that respect, from the days of *Hippocrates* up to our time nothing has changed. Technicalization of modern medicine has varied only the marginal conditions; the humanitarian mission remains unchanged.

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Life: Its Rights and Obligations

Krzysztof Szczygiel

Introduction

A definition of life is a difficult matter and some think it is utterly impossible. The reason lies not just in the mere complexity of the phenomenon of life but also in the different aproaches to that mystery. For Max Scheler its indefinability stems from its very essence, for as he sees it, it is, so to speak, " a between, " (*Zwischen*), a transition, an emergence and permanent out-going beyond oneself. Karl Rahner takes the stand that life is an analogous self-realization of being at the particular, ever higher stages of reality; it is an orderly, arranged unity of a plural reality, which in the real manifold of its component parts and moments, viewed in the aspect of space and time, nevertheless behaves as a oneness towards its surroundings: it moves and forms itself so that, having inherent in its own self the principle and the direction of motion, it never is merely a dependent function of the surroundings but as a whole is always something more than the sum of the components and of their interactions.

Among the remarkable aspects of the progress in contemporany science are the advances in the different fields of biology. For biologists life is a transient product of chemical changes taking place in our solar system on one of its planets, called Earth. A living system is an open system that takes up matter and energy from the outside and transforms it into its own structures built of polymers. These structures have a high level of orderliness maintained in a state of dynamic balance owing to the direct and indirect use they make of the energy derived from solar radiation and transformed mainly into the energy of chemical bonds. The two components whose absence would make the functioning of living organisms on earth unimaginable are deoxyribonucleid acid and ribonucleic acid.

The Darwinian theory of evolution and the discoveries in the field of genetics have left a deep impression on our present knowledge about life. The tremendous wealth and multifariousness of its forms and manifestations as well as the ambiguity of the term " life " result in numerous approaches to the problem. There are many definitions of life made from the point of view of philosophy and of science, but there is one noteworthy fact: all of life on Earth unfolds around man.

2. Christian vision of man

Acceptance of a particular conception of human life is connected with defining the rights and obligations flowing from it, dictated by solicitude for human life.

I'd like to attend to these problems in this lecture.

Having been created by an act of God in His own image, man is more than a mere particle of nature or an anonymous element of human society (JP II). Man sees himself as distinct from the other beings in the world. To him they are an object, while he alone is the subject. He is the subject because he is capable of objectifying what surrounds him.

Man's subjectiveness is strictly connected with cognition, because by reflecting on his own knowledge he reveals his own self to himself. He is the only created being who can look " inside " himself and discover his distinctness, his dissimilarity and, what is more, his superiority with regard to others in his surroundings; he is the personal subject.

Man really and positively governs himself, which means that he himself decides about himself; he is indeed the autonomous subject when he is guided by the truth he has apprehended, when he affirms by volitive act the truth about himself that he has already affirmed cognitively, having perceived and accepted it in his own cognitive act. John Paul II states that man, because of his consciousness, sees himself as distinct from the entire world of living creatures and thereby reveals his own consciousness of himself and demonstrates it to the world as a " person " (JP II).

3. Rights of human life

In the act of creation God inscribed man into a certain order, in which He laid down laws regulating man's relations with the world and with other human beings, and He also imposed upon man definite duties to perform.

Having been created in God's own image and likeness, every human being has his dignity, which should never be belittled (depreciated), but, on the contrary, should be respected and protected (JP II) Education ought to foster man's awareness of his dignity and the respect of human rights. Life in the world of material and spiritual values makes their definition a necessity. This is to be found in the U.N. Declaration on Human Rights. Their principles consist of the well-known commandments of the divine will setting up the moral order, in which man has the obligation to act conformably with the precepts of ethics and to strive for the perfection of the human person. The Declaration defines, among others, the right to life and biological growth, to spiritual development, to freedom, including religious freedom, to marriage and family life, to work, to the ownership of property, to participate in political life. All of these rights are consistent with the essence of the dignity of man seen in his entirety, with the whole of his human dimension, for human life has the highest (fundamental) value in the entire visible world.

4. Human obligations to life

A consequence flowing from acceptance of the Christian vision of Man is the obligation of solicitude for human life as a fundamental value.

God, as the Lord of life, has entrusted to man the noble service of protecting life, a service man has to perform worthily, in accord whith human dignity (*Gaudium et Spes* 50). The Church defends the right to life, not just out of respect for the majesty of the Creator, the First Source of life, but also out of concern for the fundamental good of the human being (JP II). If life is to be affirmed, it has to be affirmed for all, without any difference, but particularly for the weak, the defenseless, and the sick. A special role in the protection of life is assigned to medicine, whose task is to guard life as the unique and highest value in the visible world, for medicine's chief aim is to protect endangered human life. Let us repeat once again: medicine's obligation is the weak, the defenseless, the sick.

The human person realizes himself as a " unified unity " comprising the body as well as the soul. The body is more than a mere complex of compounds held together by chemical bonds, more than a system of tissues, organs, and functions; there is more in it than just a biological machine; it is an essential part of the human per-

son, which expresses itself through the body. Thus any intervention in the human body frm the outside, any intervention in " a patient, " is not limited to the treatment of tissues, organs, or function, but always has to deal with that somato-spiritual unity that is the whole person; it affects the human person as such and this entails moral responsibility. Hence the worth of any medical treatment has to be judged in its moral aspects with reference to the dignity of the human person, who is called to realize the vocation of the divine gift of love and of life.

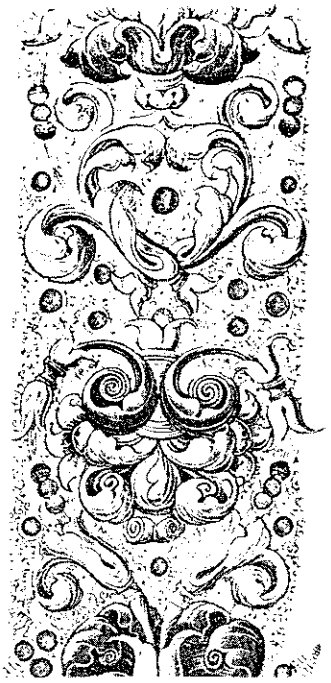
The solicitude for man concentrates on obligations to human life in the grounding of contemporary science.

The advancements of technology dominant in contemporary medicine require parallel progress in the domain of morals and ethics (RH). This is the order of the day inasmuch as experimentation, that primary stimulator of scientific progress, is fast becoming an aim in itself. Even medicine, a science centered on man, whose good ought to be its primary and only objective, is being dominated by technology. Situations sometimes arise when the fact that it is human beings who are the object of experimentation is overlooked. This happens most often in those scientific circles which view advances in biology as the ultimate goal, worth even the sacrifice of human life, which is thus reduced to the status of an object of experiment.

Today medical research is reaching deep into the very genetic substratum of human life. Genetics is becoming an important domain of medicine. Achievements in the field of so-called genetic and cellular engineering are being applied to the treatment and prevention of some serious malfunctions of living systems and to the identification (diagnosis) of diseases that hitherto were difficult to treat or incurable. Thus genetics opens new insights into the nature of different diseases and will perhaps help to avoid them or even to prevent them.

The new progress in biological techniques and the experience gained in the work with human genes make possible promising therapeutic procedures in the treatment of many diseases. Worth mentioning in this connection is the application of cellular engineering in experiments with the fusion of somatic cells in " in vitro " cultures. An example of this kind of research is the work on the fusion of cancerous and normal cells, and it may help to understand the processes of cancerous transformation. Many hopes and impatient expectations concentrate on the search for a treatment for AIDS, the dangerous epidemic of our time. Perhaps a weapon against this disease will come from genetic research.

Such medical interventions and research into diseases and dysfunctions of the human genotype carry with them many problems and possibly a serious threat. Experimental manipulations and transformations of genetic substance may make real the fantasies of science fiction about the programing and multiplying of some hereditary traits in humans. There is thus the fear that man will abuse his power in the domain of medicine; that he may infringe upon the subservient role of medicine and intervene in decisions in a way that would objectify the human person, who ought to be the chief concern of medicine. Scientists, researchers, physicians have to keep in mind constantly the subservience of their role, man's exalted position in the universe, and the dignity of the human being entrusted to their care. " Preaching the Gospel, the Church reveals to man his dignity and invites him to discover the full truth about himself " (GS, RH). It is the duty



of the physician to be constantly at the service of man and to protect the propagation (transmission) of human life. He can neither decide about it nor dispose of it. This applies to life from its very inception till its biological end. It ought to be respected and protected from the moment of conception (in the light of new biological findings, the identity of a new human creature, of a new man, is formed already in the zygote) to the time of biological death.

For God alone, God the Creator, has the power of life and death. He is the Source of all life and He alone can take it away. All humans have the same nature and all are human persons, whether it be a monocellular zygote, an embryo of eight or sixteen cells, a patient with an incurable disease, or a decrepit elderly person. They all are persons and have essentially the same moral rights and the same right to life.

Contemporary medicine is becoming dehumanized because it has been losing its humanistic and philosophical nature with technology as only an instrument; instead, it has turned into a technical skill. The causes of this dehumanization are many, and advances in technology or the expansion of medical techniques are not among the direct ones. The most important have to be located in man himself, especially in the errors in his ways of thinking and in his attempts to objectify humanity.

In view of the many different fears and forebodings about possible entrapments and dangers already mentioned here, it seems that, since it is man who controls the technical equipment, his role will be decisive. The point is that advances in technology have to be guided in ways that prevent his losing control over the products of his labor, and he must not allow control over them to slip out of his hands; he must make " the earth his own " and not lose his humanness. The struggles to maintain man's humanness have to be continued in all the centers of learning, wherever scientists and scholars are being trained. " He who accepts man for his own sake can only accept the Creator of man, and he who accepts the Creator can only accept man himself " (JP II). Therefore, the tasks of universities are so important and so responsible. Universities and all centers of higher education must train scholars and scientists familiar with the precepts (principles) of ethics, especially of occupational (professional) ethics, to serve " the Supreme Truth as well as the truth that is a reflection of the Infinite Truth in the life of the world and of mankind. "

It is this Truth that should be the aim of education at the universities. Bridges have to be built between science and faith by inculcating in the minds of the students those ethical precepts (principles) which are an affirmation of man for his own sake, which bring out the hu-

man being in man and regard man as the personal subject. The teaching of ethics at the unversities, especially the faculties of science, however, is less than scanty. Junior physicians, as well as young scientists and scholars may learn about ethical precepts (principles), particularly those of their profession, from their more experienced fellows, and it is a fortunate circumstance, indeed, if then the precepts they learn present man as the subject. Because of its paramount importance ethics should be the special concern of the Church, particularly as regards the " humanization " of medicine. The rights and the obligations that refer to human life must be guarded by scientists " armed " with moral convictions and a Christian vision of man.

But apart from the knowledge of the precepts (principles) of ethics, which is a necessary condition, there must also be the will to do good, to open oneself to the apprehended Truth.

The technocratic approach to medicine sees man as an object and is the consequence of a way of thinking very commonly accepted today. A characteristic trait of this thinking is that it creates an imitation of hope based on a counterfeit of truth. Man usurps for himself the right to constitute the truth instead of only ascertaining it. The subject in search of truth changes from the one who discovers it with humility into its proud and self-assertive creator. In the place of the truth inscribed into the being of man and discovered through self-knowledge he tries to introduce a revolution entailing ontic and epistemological self-creation. To accept this standpoint has far-reaching consequences. There is also the danger that philosophical systems that have persisted more or less unchanged since the Enlightenment and still lurk in the minds of many, including scientists engaged in the medical field, may lead to the objectification of man.

To reduce man to absolute immanence with respect to the world has some consequences other than the Nietschean death of God; it also entails the Sartrean perspective of the death of man deprived of ultimate eschatological possibilities (JP II). To subscribe to such philosophical systems leads to the dehumanization of man's death. To strip death of its metaphysical nature leads to its objectification; for it reduces death to a purely biological phenomenon, stifling disturbing questions on eschatology and eternity. This attitude towards death makes possible the dehumanization of life, for when death is reduced to only its technical, objective aspects, then man also becomes a technical object. The metaphysical vision of the death of man then comes as an obstacle to the positivistic and technocratic outlook upon the world. " The attitude to death co-defines the attitude to life. Death is the key to the question about who man really is " (Ratzinger).

5. Conclusions

To preserve the subjectivity of the person within the full range of human activities and to prevent his reduction to the rank of an object are the ultimate reason and sense of human rights as understood contemporarily (JP II). With the special and responsible position that he holds in the world, there are two questions that man must watch carefully: not to submit the truth about himself to his own will and not to submit himself to the world of things. For to " make the earth his own " also means that man must not allow the earth to dominate him. He must avoid self-deification just as much as self-objectification.

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Second Session

Man and Health

Remarks by the President of the Session

Professor Gajdusek stated that every man, whether ill or healthy, wants to have his human dignity respected: we judge a physician by how he respects the human dignity of his patients.

He observed that the reversal of the pattern of mortality in the last century, as pointed out by Professor Bergström in the preceding session, had been mainly the result of sanitary and civil engineers and politicians providing clean water, improved sewage disposal, roads for rapid transportation and the refrigeration of a stable, year-round food supply. Epidemic diarrhea had been the great infant killer in previous times. Throughout the recorded history—and probably the prehistory as well—of mankind six pregnancies have generally been required for a woman to have two survivors into child-bearing age. Our experiences in Java, China, India, and Bangladesh have shown us that this cannot continue. In some parts of the world, we have been able to save babies whose mothers cannot support their large families either economically or physically. Corrective adjustment of the expected high loss of infants has been much slower in arriving than infant survival, thus leading to a population explosion. Recourse to contraception, abortion, and sexual abstinence in response to moral, political, economic, and other psychosocial pressures we little understand has, at the same time, led to one-child families in China and the reduction of family size to less than two children in Japan, much of the United States, and Europe.

The Catholic Church has opposed the sexual revolution of recent decades, but it is an undeniable fact. The medical profession has been forced to recognize a worldwide change in the pattern of sexually transmitted diseases, of which AIDS is just one of the most highly publicized examples. Medical researchers and practitioners must be realistic and not make false promises about impending cures for such diseases which may prompt governments not to take sufficient preventive measures now within their means. Moreover, steps must be taken to avoid tragedies like those which have already occurred in this century as a result of the over-hasty use of inadequately tested drugs.

Professor Gajdusek concluded by emphasizing that physicians must not display overconfidence and arrogance, but awe and humility before God and nature and the human suffering of patients—in the realm of medical ethics this is the major message concerning the humanization of medicine which the experience of the past half century should teach us.

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Molecular Medicine: The Power and the Responsibility

Daniel C. Tosteson

Your Eminences, Your Excellencies, Mr. President, and colleagues: It is a privilege for me to have the opportunity to participate in this conference on the Humanization of Medicine.

I have a deep personal and professional concern for the subject of this conference. The social mission of the Harvard Medical School, and all other medical schools throughout the world, is to prepare for the medicine of tomorrow. The future will be shaped by the discovery of new ideas through research and the education of young persons for medicine and the medical sciences. New people are more important since they will discover the new ideas. If the medicine of tomorrow is to be more humane, it will be so in large part because the physicians are educated to practice more humanely.

To achieve this goal is no small challenge. The pace of discovery in the sciences basic to medicine, the rate of invention of new technology useful in medicine, the consequent complexification in the socioeconomic organization of medicine all continue to accelerate. How to put the extraordinary and increasing power of modern medicine to the use of the sick and suffering is the opportunity and the problem of our times.

These are my themes. We are on our way to a complete chemical and physical description of the human body, a description that envisages life as a system of molecules. This description will provide unprecedented power for human beings to influence consciously all forms of life, including their own. This power raises to practice moral and ethical issues that were heretofore largely theoretical. There is a great need for mankind to develop social systems that will ensure that man's power to alter man is used responsibly.

There are many ways of thinking about human beings (Table 1). I tell our beginning medical students that they must develop a least three sets of pictures, portraits of man, in order for them to practice medicine effectively. These three categories of thinking are: first, man as a living organism as developed through the natural sciences; second, man as a member of society as addressed by the social sciences; and third, man as a unique individual as considered in the humanities. These three ways of thinking about human beings are, of course, interwoven and inseparable. Health and illness never involve only one dimension but always all three. It is essential that physicians be aware of all three dimensions and know in which dimension a particular preventative or therapeutic intervention will be most helpful.

In my remarks today I am going to concentrate on man as organism because I believe that the unprecedented pace of discovery in the natural sciences bearing on human biology is transforming profoundly the ways we think about ourselves, not only in medicine but in all aspects of living. From the point of view of the natural sciences, man as a living organism can be seen as a hierarchy (Table 2). This hierarchy is organized in units of increasing size; from molecules through macromolecular aggregates, to organelles like mitochondria and nuclei, to various kinds of cells, to groups of cells organized into tissues, to tissues organized into organs, and to organs related in organ systems. One can think in terms of molecular instruments, cellular orchestras, and the music of life. This afternoon, I direct your attention to the molecular level of organization because it is discoveries at this level that are producing the most serious changes in our understanding of human biology.

Man as a system of molecules

Reflect with me, then, for a moment or two on the idea of man as a system of molecules

(Table 3). We now know that there are approximately one million genes, each coding for a different protein. In the human population, there are approximately one hundred mutant forms of each one of these genes. Moreover, these genes can recombine and rearrange to produce an even greater variety of proteins. For example, such genetic recombination and rearrangement is responsible for the remarkable diversity of antibodies in each individual human being. In addition, each human body contains many more than a million molecular components synthesized by proteins serving as enzymes that catalyze various chemical reactions. Thus, viewed as a system of molecules, each human body contains a billion or more distinguishably different components.

These many diverse molecules are not static but rather react with one another in a dynamic molecular system. Moreover, the system is not closed or isolated from its surroundings, but rather open, continually exchanging matter and energy with the environment. The maintenance of a constant molecular composition, that is, the steady state, is absolutely dependent on the continual flow of matter and energy through the body. In this sense, we are what we breathe and eat.

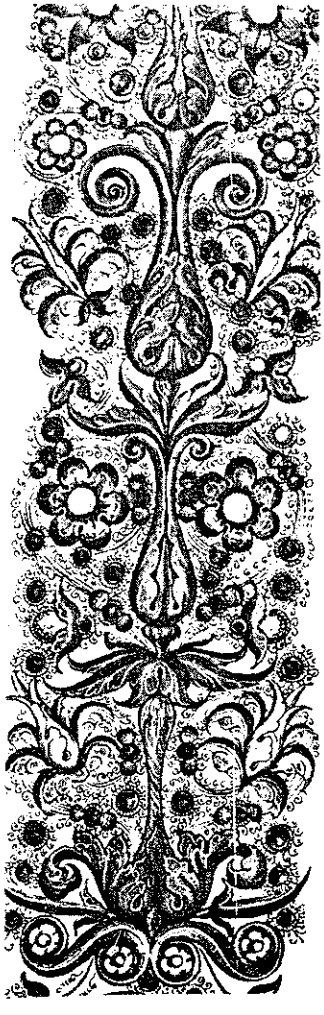
One of the most impressive ideas to emerge from molecular biology is the unity of life (Table 4). We now recognize that there are four bases in deoxyribonucleic acid (DNA) and that one genetic code determines the molecular composition of all forms of life on this planet from viruses to man. In all living organisms, this code directs the synthesis of proteins made from the same building blocks. These building blocks are twenty amino acids, all of which are 1 or levorotatory optical isomers. We have discovered that adenosinetriphosphate (ATP) is the immediate source of energy for movement, transport, and synthesis in virtually all forms of life. We recognize that the amino acid sequences of the proteins that subserve crucial functions has been tightly conserved throughout evolution. Good examples are the heme proteins, which play an important part in respiration.

Equally impressive is the extraordinary diversity of molecular biology (Table 5). The molecular composition of each species, each organism, each cell is unique. Indeed, at any moment each chemically identical protein molecule has a unique shape. Since biological function depends on shape, chemically identical molecules are functionally different as they assume different shapes. The range of functional capabilities staggers the imagination.

The molecules of which we are made participate in and direct our development (Table 6). Each individual human being is formed from one cell by successive cell divisions. Each and every cell contains the same genes present in the fertilized ovum. Yet each daughter cell has a unique molecular composition because only some, not all, genes are expressed in each cell. The pattern of gene expression determines differentiation into diverse forms, such as blood cells, nerve cells, epithelial cells, etc.

Moreover, inheritance has a molecular basis (Table 7). Information is transmitted from generation to generation by DNA and other molecules in germ cells. It is this inherited DNA, interacting with the environment, that directs the formation of offspring. Since functional differences in organisms arise from molecular composition, natural selection among individual organisms selects for particular molecules and molecular arrangements.

This molecular view of man is new, the result of discoveries made during the past few decades. Indeed, it is astonishing to note that the whole of chemistry is little more than two hundred years old. Despite this short history, there are now no conceptual or technical barriers to progress in understanding man as a system of molecules. Each of the billions of chemical parts of the human body will ultimately be isolated and characterized. We are now less than 1% of the way along this path. However, discussions around sequencing the human genome now focus on whether it will be most efficient to begin an organized program in that direction now or in two or three years, not two or three decades. The consequences of having available a complete sequence of the human genome for medicine and society are incalculable. This path will surely be traversed and it will confer on us much greater power and responsibility for our own destiny.



The power of molecular medicine

With this picture of man as a system of molecules in mind, consider for a moment the power of molecular biology for medicine (Table 8). In pathogenesis we now recognize the molecular basis for many infections, for example, the specific chemical reactions catalyzed by certain bacterial toxins. Increasingly, we discern the molecular basis of cancer. So called oncogenes, somatic mutations of normal genes that are associated with the development of cancer, have been identified and characterized. We are learning about the molecular basis of atherosclerosis and other forms of cardiovascular disease as we understand better the molecules involved in lipid metabolism that is disordered in the formation of atherosclerotic plaques.

The power of molecular biology for medicine is also evident in new diagnostic techniques. Sensitive assays for molecules in samples of body fluids and tissues are now possible. These assays make use of new immunological, enzymological, and optical techniques. Increasingly it becomes possible to make chemical analyses of living organisms, including man, noninvasively by using magnetic resonance. Molecular biology is also making available new modes of therapy. (Table 9) Recombinant DNA techniques permit the production of human proteins such as growth hormone, tissue plasminogen activator (TPA), and growth factors, such as erythropoietin, granulocyte macrophage colony stimulating factors, *interleukins*, and so on. We are learning to activate cells removed from a patient outside the body by incubating them with growth factors. Such activated cells can be reintroduced into the patient with therapeutic benefit in some cases of cancer. It is possible that such approaches may make it feasible to grow parts of organs. It has already been reported that a few skin cells from a severely burned patient can be grown in culture into sheets which then can be used to graft onto the regions of the body where the skin was destroyed by the burn. You heard yesterday about some of the prospects for the introduction of genes into individuals with defective or absent genes. Moreover, as we come to understand better the relationship between molecular shape and biological function, it becomes more and more possible to design rationally compounds that will insert into the structure of biological molecules and thus modify function.

Molecular biology also provides new ways of preventing disease. I think particularly of the inhibition of enzymes that participate in the metabolism of molecules involved in the development of chronic diseases. One example is drugs that inhibit the enzyme hydroxymethyl glutamate reductase (HMGR), which is essential for the synthesis of cholesterol. Inhibition of this enzyme prevents the development of hypocholesterolemia in individuals who have a genetic disorder leading to the synthesis of too much cholesterol. Another example is the development of inhibitors of the angiotensin converting enzyme (ACE). Since angiotensin is necessary for the maintenance of blood pressure, inhibition of ACE reduces hypertension. Another example of molecular biology leading to new techniques of prevention is the synthesis of peptides that mimic the antigenic idiotypes in proteins of bacterial and viral pathogens. These peptides can be used as vaccines. This approach is being used aggressively in the attempt to develop a vaccine against the virus that causes AIDS.

New responsibilities imposed by molecular medicine

The extraordinary power of molecular medicine imposes new responsibilities on physicians. Many difficult questions arise (Table 10). First, who should own molecular technology useful in medicine? In contrast to the practice of medicine, it has long been accepted that drugs and devices are most usefully produced by businesses in the private sector. These businesses operate according to a set of financial incentives similar to all other businesses. Sometimes the financial incentives are not congruent with the medical incentives. An excellent example is the use of lithium for the treatment of mania. The effectiveness of this simple salt in calming manic patients was recognized by Cade in Australia in 1949. It was not until the late sixties and early seventies that this theory became widely used in many parts of the world because there were no financial incentives for pharmaceutical companies to produce and market the salt. This phenomenon of " orphan drugs " was discussed in some detail at last year's conference. The problem continues to present itself in new forms. What should be the approach to giving protection to companies that first succeed

in using recombinant DNA technology to produce human proteins? Should a human protein be patented?

Under what circumstances is it right to test for molecular predisposition to disease? We are all aware of the conflicting opinions on this question as they bear on testing for antibodies to the human immunodeficiency virus (HIV) that causes the AIDS syndrome. Equally divisive is the issue of diagnosis *in utero* for various genetically determined diseases.

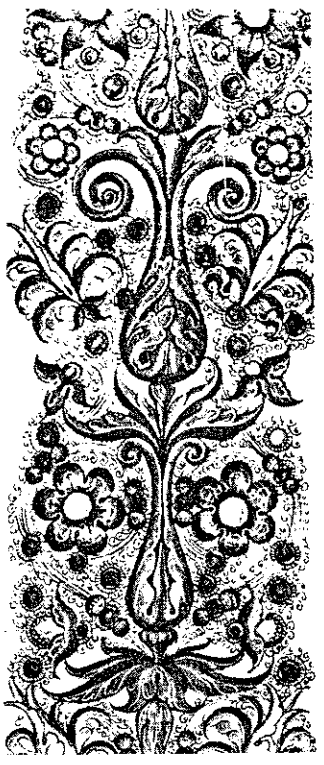
Under what circumstances is it right to use molecules to alter function in normal persons? A good example is the desire of some zealots to use human growth hormone to produce basketball players. Humankind has long grappled with the dilemma of the social use of mind-altering drugs such as ethanol and caffeine. We can confidently expect that many more mind-altering compounds will emerge as molecular medicine continues to develop.

Is it right to intervene when *in utero* diagnosis reveals a genetic defect? The example of sickle cell anemia is well known. Even more poignant is Huntington's disease, an inexorably fatal degenerative disorder of the nervous system that is genetically determined. Work at the Harvard Medical School has recently located the chromosome on which the gene for Huntington's disease is located and work is progressing rapidly toward the identification of the specific gene involved. In utero diagnosis will be available in the near future. The onset of this disease usually does not occur until the third or fourth decade of life. A man who has provided much of the financial support for research on the genetic origins of Huntington's disease at Harvard has done so in large part because his wife suffers from the disease and his children are at risk. His as yet unborn grandchildren are at risk, but could be diagnosed early in fetal development. What should they do? Who should decide?

Obviously, decisions of this kind depend not only on the insights of the natural sciences and the view of man as a molecular system, but also on values that have their roots in the ideas of man as a member of society and man as a unique individual. These decisions will reflect a philosophy. It brings to mind an aphorism attributed to Aristotle that " medicine begins in philosophy and philosophy ends in medicine. "

What are the elements of a philosophy for modern medicine? That truly is the question underlying the humanization of medicine. At least two principles strike me as essential. Neither is new; both reflect the unchanging face of medicine. One is the principle of informed consent of the patient. This principle expresses respect for the patient as an independent person who has the ultimate responsibility for his or her own actions. The proper role of the physician is as an advisor, not as a director of the behavior of the patient. This seems straightforward, in principle, but is, and always has been, difficult in practice. An important element of illness is a desire on the part of the patient to transfer responsibility for his or her behavior to the physician. It is an ancient and solemn obligation of the physician to accept the responsibility thrust upon him by the patient in a way that continues to recognize the independence and dignity of the patient. The dilemma becomes more acute as the sophistication of molecular medicine increases. It becomes more and more difficult for a patient to be truly and effectively informed.

A second historic principle of a philosophy is to do no harm. The potency of modern drugs makes this axiom an increasing challenge. Powerful drugs have dangerous side effects. The use of multiple drugs simultaneously in different amounts and combinations not only offers potential to each individual patient but also the threat of toxity arising from complex in-



teractions between drugs. Sometimes the advantages of preventing infectious diseases by immunization of populations at low risk are more than offset by the disadvantages of pathological reactions to vaccines. Modern molecular medicine makes it more difficult for physicians to meet their obligation to do no harm.

Another essential element in a philosophy adequate for the medicine of the future is a view of man that includes the discoveries of modern science about our nature. Some of the deepest insights of modern science challenge traditional beliefs and are therefore very confusing. We do not like to be confused. But the attempt to exclude these new truths from our philosophy can, in my view, only lead to greater confusion. Somehow, we must find a philosophy that contains both science and the cross.

Let me be more specific. Most modern scientists accept the idea that the human mind is inseparable from the human brain, which, somehow, is the result of billions of years of biological evolution. That is, in this sense, a mind is a gene product. Now the news is that gene is a mind product. I mean this not only in the sense that gene is a word created by the human mind as, indeed, mind is a word created by the human mind. I also mean that we can now consciously manipulate the genes that determine our molecular composition, including the molecular composition of the brain. We recognize mind and gene as interacting entities (Table 11). These ideas are the fruits of the labors of countless honest, careful, and courageous scientists over many centuries. In their work these people were driven by a passion for the truth.

The motto of Harvard University is *Veritas*, the truth. I see a symmetry in the order of ideas that we call truth and the molecular order in genes. Human truth can be viewed as a result of a natural selection of ideas. We believe that which is consistent with our experience and reject that which is not. It is through such a process that we build an orderly set of ideas on which we depend, the truth. The chemical order in genes we now recognize to be the result of the natural selection of organisms, not a particular set of chemical forces. Genes which don't function lose their chemical order over many generations. Genes which do function maintain their order. I strike the analogy between the order in ideas that we call truth and the order in genes.

I have attempted to share with you some reflections on the emergence of the view of man as a molecular system, the power that this view provides medicine and society, and the new responsibilites that are arising from this new power. I emphasize the need for a philosophy that brings the power of modern molecular medicine to the use and service of individual human beings who are sick and suffering.

Thank you for your thoughtful attention.

Prof. DANIEL C. TOSTESON
Dean of the Harvard Medical School

TABLE 1
WAYS OF THINKING ABOUT THE HUMAN BEING
MAN AS A LIVING ORGANISM: NATURAL SCIENCES
MAN AS A MEMBER OF SOCIETY: SOCIAL SCIENCES
MAN AS A UNIQUE INDIVIDUAL: HUMANITIES

TABLE 2
MAN AS A LIVING ORGANISM
A HIERARCHY

MOLECULES
MACRO-MOLECULAR AGGREGATES
ORGANELLES
CELLS
TISSUES
ORGANS
ORGAN SYSTEMS

TABLE 3
MAN AS A SYSTEM OF MOLECULES
CODING GENES
MUTANTS OF EACH GENE
DIFFERENT PROTEINS BY RECOMBINATION
OF GENES
DIFFERENT MOLECULAR COMPONENTS
SYNTHESIZED BY REACTIONS
CATALYZED BY PROTEINS

TABLE 4
MAN AS A SYSTEM OF MOLECULES
THE UNITY OF MOLECULAR BIOLOGY

FOUR BASES IN DNA, ONE GENETIC CODE
20 L-AMINO ACIDS MAKE PROTEINS
ATP AS IMMEDIATE SOURCE OF ENERGY
FOR MOVEMENT,
TRANSPORT, SYNTHESIS
CONSERVED SEQUENCES
IN ESSENTIAL PROTEINS

TABLE 5
MAN AS A SYSTEM OF MOLECULES
THE DIVERSITY OF MOLECULAR BIOLOGY

THE MOLECULAR COMPOSITION OF EACH SPECIES,
ORGANISM, AND CELL IS UNIQUE

AT ANY MOMENT, EACH CHEMICALLY IDENTICAL
PROTEIN MOLECULE HAS A UNIQUE SHAPE

BIOLOGICAL FUNCTION DEPENDS ON SHAPE

TABLE 6
MAN AS A SYSTEM OF MOLECULES
THE MOLECULAR BASIS OF DEVELOPMENT

EACH INDIVIDUAL IS FORMED FROM ONE CELL
BY SUCCESSIVE CELL DIVISIONS

EACH DAUGHTER CELL CONTAINS THE SAME GENES
(EXCEPT FOR SOMATIC MUTATIONS)

EACH DAUGHTER CELL HAS A UNIQUE MOLECULAR
COMPOSITION THROUGH SELECTIVE GENE
EXPRESSION

TABLE 7
MAN AS A SYSTEM OF MOLECULES
THE MOLECULAR BASIS OF INHERITANCE

*INFORMATION IS TRANSMITTED FROM GENERATION
TO GENERATION BY DNA (AND OTHER
MOLECULES) IN GERM CELLS*

*NATURAL SELECTION OPERATES ON THE MOLECULAR
DIFFERENCE BETWEEN INDIVIDUAL ORGANISMS*

TABLE 8
THE POWER OF MOLECULAR BIOLOGY FOR MEDICINE
PATHOGENESIS
THE MOLECULAR BASIS OF INFECTION
THE MOLECULAR BASIS OF CANCER
THE MOLECULAR BASIS OF ATHEROSCLEROSIS

DIAGNOSIS

MORE SENSITIVE AND LESS INVASIVE CHEMICAL
ASSAYS

TABLE 9
THE POWER OF MOLECULAR BIOLOGY FOR MEDICINE
TREATMENT

*RECOMBINANT DNA-PRODUCED HUMAN PROTEINS:
GROWTH HORMONE, TPA, GROWTH FACTORS*

*CELL THERAPY WITH CELLS ACTIVATED OUTSIDE
THE BODY BY GROWTH FACTORS*

GENE THERAPY

*RATIONAL DRUG DESIGN USING THREE-DIMENSIONAL
CHEMISTRY*
PREVENTION

INHIBITION OF SPECIFIC ENZYMES

SYNTHETIC VACCINES

TABLE 10
NEW RESPONSIBILITIES ARISING FROM MOLECULAR
MEDICINE

WHO SHOULD OWN MOLECULAR TECHNOLOGY
USEFUL IN MEDICINE?

SOME CASES:
LI FOR TREATMENT OF MANIA
ORPHAN DRUGS
RECOMBINANT DNA-PRODUCED
HUMAN PROTEINS

TABLE 11
EVOLUTION AND MIND
GENE MIND

Environmental Conditions to Promote and Defend Health

The progress of medicine is disturbing. Man is no longer sure of his own death.
HANS HERMANN KESTEN

The attainments of medicine may be summarized in a very simple formula: water, when drunk in the right measure, does no harm
MARK TWAIN

Norbert Martin

Health represents a lofty value. It is the result of the interaction of diversified factors and permeates all levels of human activity. The definition of health is determined by sociocultural elements and thus varies according to the differing social and philosophical systems (*Weltanschauungen*).

The idealistic definition of health formulated by the World Health Organization in 1963 is well known: " Health is a state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity. "

An anthropologist could define health from a cultural standpoint as a state of active adaptability of the organism to the environment in which it lives; a sociologist, as the optimum situation for the individual to realize fully his own functions and roles in the society for which he was socialized; a philosopher, in turn, as the optimum functioning of the body, soul, and spirit; a social scientist specializing in the labor field, as a general, fundamental capacity of the physical man to work as a member of the labor force; and so forth.

All of this makes it clear that the concept of health—like that of life as well— escapes exact definition. The definition of these concepts depends existentially on the way one understands the living organism and its relationship with the environment. Since this vision varies in different cultures and changes even in the context of a single culture, the concepts of health also change. In this sense, health signifies what man lacks when he feels ill. In a positive sense, health is the result of a dynamic, complex interrelationship among physical, psychological, and social factors in human nature wherein numberless aspects of the respective social, cultural, and environmental system are reflected.

Because of the complexity of man considered in his wholeness, health—like illness, its opposite—is not reduced to physical phenomena. The rituals and ceremonies which have always been associated with health care or the behavior of the sick and their cure offer undeniable evidence. In the wake of the Enlightenment, we well-instructed moderns discriminate against them as folk medicine (healers, witches, shamans), but the ritual of the visit by the chief physician at the first-class hospital where work is carried out according to the latest scientific findings does not fail to disclose a similar mentality.

The gradual defeat of infectious diseases (tuberculosis, typhus, colera, and so on) is regarded as one of the great conquests of medicine at the close of the nineteenth century. This was the period in which the attention of science and public interest were centered upon the discovery of the influence of the environment on man's life. There was increased awareness of the importance of improving sanitary and health conditions and nourishment. This recognition has also been confirmed today and will determine the safeguarding and promotion of health in the future as well, with a view not so much towards direct intervention by medicine as, rather, towards behavior, food, lifestyle, and, therefore, in the final analysis, the basic elements of the environment in which one lives.

Even more than the infectious illnesses of the last century, the chronic, degenerative diseases of this and the coming century (circulation, cancer, diabetes), called *Zivilisationskrankheiten* and leading to incredible mushrooming of the health care system and its expense, are also determined by environmental factors which must be controlled.

Physical and psychic stress, hypernutrition, drug abuse, bad eating habits, sedentary life, air pollution, population increase, habitat culture, urbanism, leisure time behavior, sexual promiscuity (AIDS) will constitute the problems for preventive medicine in the twenty-

first century; their solution must be the focus of the attention devoted to safeguarding and promoting health.

Many of these problems are as old as medicine, as is demonstrated by a glance at the principles of Hippocrates or Paracelsus, who, even in the ancient world insisted on the importance of a reasonable relationship to light, air, water, heat, soil, and climate. They proposed a culture of eating and drinking, the balance between motion and repose, between sleep and wakefulness, the equilibrium of metabolism and concern for the landscape as a complex of environmental conditions necessary for enjoying health.

At present, in fact, medical schools do not pose the question as to what health is (a healthy lifestyle, good nutrition, etc.). As a result, our physicians, also subjected to the stress of competition and locked within structures and bureaucracy, suffer from the lack of a "spirituality of health." They replace it with an unhealthy lifestyle leading to a shortening of life by 10 to 15 years below the average for the population. Striking a comparison, this seems to me a sad and strange case of so-called iatrogenic illness.

Anyone familiar with the behavior typical of every family lifestyle rooted in traditional cultures knows, as does sociology, that such traditions are more important for disease prevention and treatment than large-scale government programs for centralized health information and education. The conditions for the functioning of the family involved in social and environmental policy are thus of prime import in promoting and defending health. It is precisely the multiple bonds of man in the organism of a healthy family (and, on the other hand, the analysis of patterns of pathogenetic illness in those deprived of them) which protect us against an excessively reductive, monolithic concept of etiology.

An example may clarify the consequences of differences in sociocultural status in relation to life and death. In Geneva during the seventeenth century, two-thirds of those born into the highest social class survived until age five, but not even half of those from the lower class survived. As we progress in age level, the difference becomes even more marked: twice as many from the upper class reached the age of 15 as compared to the lowest class, and three times as many, the age of sixty and over. Environmental factors undoubtedly contributed to determining this disturbing contrast.[1] Some of them (type of dwelling, work conditions) are still influential; others are new and typical of our time. From among numerous possible examples of environmental influence on health and, therefore, on illness today, we may recall those traceable to the importation of parasites brought about by refugee immigration and mass tourism in the tropics.[2]

With the birth of modern cities, man has created a new *biotopos* for himself. While modern culture is unthinkable without the city, urbanism itself as the creation of a second, artificial environment has repercussions on man. These become greater and more decisive the more cities swell in size and progress technologically. They affect both the individual and the social *biotopos*. Just by way of example, we may cite the lack of antigenic primary contacts under aseptic conditions, the selection of germs as a result of modern methods of producing and packaging foods, means of preservation disinfecting the intestine, air pollution weakening the system of immunity, mothers' reluctance or even incapacity to breast-feed, the existence of only children as a consequence of adult egotism, the postponement of the birth of the first child until the mother is middle-aged or older, and entrusting the very young to outsiders.[3]


Espice in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The stimulus word " environment " cannot signify just a world surrounding man having him as its center and placed at his service. On the contrary, it cannot be sufficiently stressed that man in his wholeness is inserted into nature around him, but from the outset there is a reciprocal relationship involved, for man, from the moment he enters into history, " acts " upon nature, which begins to be transformed under the action of man as a cultural being. In this sense, the environment is not " nature, " but the world transformed by man, natured shaped by him—in a word, the " environment " he has elaborated and reelaborated, or culture in its social expression. It thus embraces work and professional organization, habitats, leisure-time behavior, the traffic system, the market and economy, the system of the family and kinship, etc. A clear, obvious image of this complex interrelationship involving nature, culture, and society might well be expressed as the *logos* of the *oikos*—i.e., ecology.

This is ancient European terminology given to us by early Greek philosophy. We reencounter it in Hippocrates precisely in the conceptual domain of the " environment, " of the human person in the context of health and illness, with which we are concerned here. In his " essay on the environment, " this itinerant Greek physician deals in a most modern way with the basic problems of all medical research on the environment (environtology), that is, the problems concerning the instinctive limits between nonharmful (physiological) and harmful (pathological) life conditions as regards air, water, or location (*peri aeron*, *hydaton*, *topon*). This is not the place to develop these ideas from the standpoint of the history of medicine and the sociology of culture as they have unfolded in Western (and also Arabian and Chinese) thought over the centuries.[4]

The main theme of Hippocrates clearly manifests, however, the intertwining of geophysical, biological, medical, and sociocultural factors in the concept of environment, ecology, which has entered into an entirely new and gravely threatening phase and must thus be urgently saved and shaped by man.

The development and defense of health make this need imperative. The topic may be dealt with here only in general terms, without the necessary nuances demanded by preventive, curative, and rehabilitative medicine, work and social medicine, general hygiene, social psychiatry and medical anthropology. For this reason, in the future, especially in the sphere of " man and the environment, " we shall have to consider light and air, water and soil, heat and radiation, not only as man's material context, but rather as created realities entrusted to man as gifts and tasks so as to shape a human environment.

The epidemiology of chronic illnesses, especially conditioned by the environment today, in the analysis of risk factors encounters numberless sociocultural and psychosocial components such as work stress, eating habits, alcohol and nicotine abuse, and behavioral disturbances prompted by one's own personality. It is relatively easy to draw from these facts a vade-mecum of practical maxims for the defense and promotion of health, like eating well, for instance. In the field of science, neuropsychological disturbances are today generally but not exclusively considered to be provoked by environmental factors. Pathogenic family relations, conflicts with the environment, and other elements in different ways represent the hinterland of threatened health accessible to us. The threats deriving from an accumulation of negative social conditioning factors (income, esteem, cultural background, efficiency, etc.) have been brought out by social psychiatry and criminology. In such " labeling " and stigmatizing, environmental elements play a key role, for the distribution of economic resources, the social status system, and political influence are among the forces most subject to the sociopolitical configuration.

The influence of social factors on the appearance of illness (sociogenesis) may be explained above all on the basis of the categories of classical medicine, according to which the production and manifestation of an illness are determined by the individual predisposition coinciding with pathogenic environmental influences.

In terms of social science theories, illness arises from an individual biophysical predisposition acquired in the course of life coinciding with relevant psychological and social influences in one's current environmental context. Individual behavior and experience are conditioned by the modality (quality) of the socialization process affecting the way difficulties are overcome and deficiencies are compensated for later on in life.

It is thus obvious that no one can elude environmentally determined conditioning; i.e., no one can escape possible threats from the environment and the psychosocial problems deriving from them. In this sense, from now on primary, objective ecological factors will continue to play a role to which man is subject. However, many of these factors which, in the course of human history, have been man's cruel enemies, thanks to technology's partial or complete dominion over them have lost their life-threatening character. At the same time, on the other hand, there arises before man in the closed sphere of technology a " secondary " environment created by man himself which generates pathological factors heretofore unknown and thus initially uncontrollable. As compared to the first one, this " second nature " plays an increasingly predominant role in problems of health, medicine, and the situation of being ill.

In the future, for instance, men's growing mobility will represent a serious risk for health. It suffices to recall continual changes of residence bringing with them successive demands for adaptation to new environments, not to mention tourism, with its abrupt environmental shifts provoked by journeys to far-off lands, vacations in the tropics, trips around the world, different time zones, changes in culture and food, etc.

The environment's noblest object is no doubt man himself. From a sociological standpoint, it is enlightening to take a look at the human and environmental life cycle, for it demonstrates that man's most important " environment " is the family itself. Initially, *in utero*, the mother is the individual's environment *par excellence*, and after his birth the family's social context with its specific qualities represents a determining factor for the conservation, promotion, and defense of the individual's health. Later on in life the school and the domain of work and experience outside the family are added—the environment as the context in which man receives continual, complex influences on the material, communicative, and intellectual planes. These reciprocal relations lead to complex forms of interdependence in differing degrees. The family's attitude and behavior as regards health depend on its position in the framework of the social strata. The family is thus essentially determined by the ideas and attitudes concerning health proper to the respective social strata. This determines the manner and measure in which people participate in the social services of health care.

70% of the inhabitants of Central Europe live in cities, 50% in large cities, which have a climate different from that of outlying areas. The variation is measurable (we shall leave aside the problem of the sociocultural consequences of urbanization) and is characterized by:

- an average temperature 1 or 2 degrees higher;
- more atmospheric precipitation in areas protected by the wind caused by the heating of the ground;
- up to 40% less horizontal wind velocity for weak winds and at the same time, more marked disturbances for the strongest winds;
- 2 to 10% less relative humidity in the air;

• 5 to 15% less insolation;
• 10 to 30% more mist and a relative loss of visibility;
• more smog: about 1000% aerosol particles and about 50 to 2500% gaseous substances. [5]

There is also a lack of green spaces needed to filter smoke, dust, and gas from industry, fires, and traffic. In this way smog is formed, which may become dangerous for certain population groups that are more threatened. The urban climate in general diminishes the premises for defending health and contributes much less to improving it. Only environmental programing which takes into account ecological demands and plans *in conformity with*—not against—the climate can create an environment consonant with nature and at the service of man.

All of this also applies to traffic organization, housing policy, leisure time, work conditions, and so on.

As regards the specific problems of health care, at the close of our century we find ourselves in the midst of a difficult, dramatic process of transformation which, going from the hospices for the poor in the Christian middle ages to the middle-class hospital facilities of the nineteenth century and twentieth century social-health assistance, leads to the need for working out a global health care theory in order to attain the best care for the sick and needy as the foundation and protection of a culture with a healthy, natural life.

We have been asked what our objectives should be in providing environmental conditions favorable to health. These constitute an ordered life in the face of the crisis zones which will accompany us until the third millennium. They were, however, described in the old problems of classical theories of medical science: [6]

• pure air, clean water, the cautious use of energy resources;

• healthy nutrition of the world population and prevention of hyperalimentation, alcoholism, and drug abuse;

• humanization of the workplace and the home and the balanced organization of leisure time in a society based on production and consumption;

• security and humanization of family environments as premises for a healthy approach to procreation and ideal conditions for socialization from birth on; in this respect, even at the beginning of this century Grotjahn said that the family and the school have a decisive significance for man's health; [7]

• attention to the times of sleep and wakefulness, the fight against noise, harmony with the rhythms of nature;

• regulation of physical secretions, including a theory and practice of human social hygiene;

• health education which is anthropologically and ecologically grounded, accompanied by a " psychohygiene " that must lead to generalized health training.

The extraordinary increase in illnesses of civilization takes us to the threshold of a development by virtue of which, with a view towards environmental problems, we can no longer close our eyes to the fact that, alongside curative medicine, it is indispensable for us to acquire a preventive social policy in general and subjective life conduct of a preventive nature so that environmental resources will not be destroyed, but rather defended and ordered.

In doing so, man's action must be determined by cautious respect and respectful caution in being aware that the human condition on earth will never achieve the elimination of illness, suffering, and pain. He who acts radically to create a utopia or an earthly paradise runs the risk of falling into a dialectical contradiction. In this perspective, faith in a supernatural life after death can protect us from a social policy that is too radical and unrealistic and hence utopian— i.e.,

the " sociotechnological nemesis. "

Health and the protection of health constitute a single process. They are the result of autonomous reactions but are also culturally characteristic of a reality created by society. Moreover, we possess a capacity to change and transform environmental relations, to grow and age, to heal in the case of lesion and illness, to suffer, and, finally, to await death in peace and trust. For this reason, fear as well forms part of health, along with the interior strength to live with it in the confidence that fear and death are not the end of human life, but that one attains salvation by transcending them. In this sense, metaphysics is a constitutive, regulatory element in a realistic, humane environmental policy.

The promotion of health must be achievable by each of us. It implies personal well-being and not only access to health care services. This entails the elimination of such impediments as undernourishment, ignorance, filthy water, unsanitary dwellings, and so forth.

The decisive factors influencing health are the biological basis of man and the environment, lifestyle, and the organization of health services. Close analysis shows us that all the other factors undergo the influence of the environment. As a result, the promotion and defense of health will increasingly depend on the effective regulation of environmental conditions involving health policy and ecology with a view towards restoring the environment.

Prof. NORBERT MARTIN
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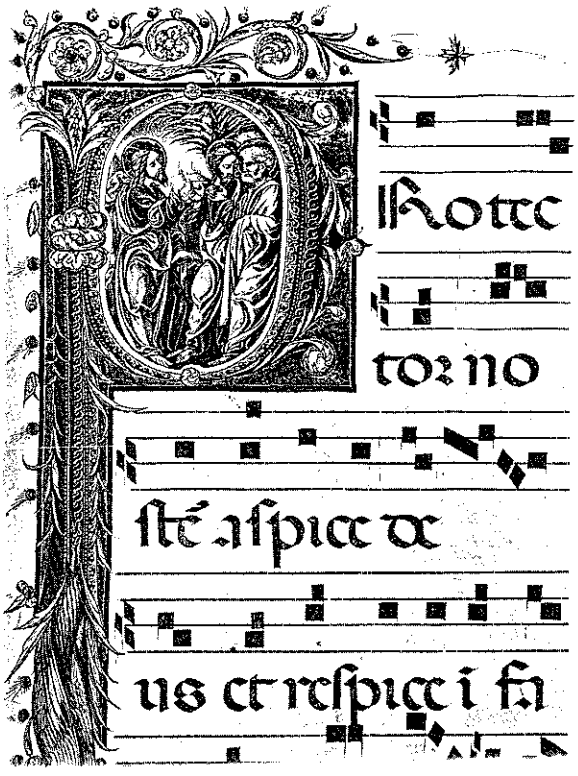


Notes

[1] ARTHUR E IMHOF, *Die gewonne Jahre* (Munich, 1981), p 122 ss.

[2] Cf. *Das öffentliche Gesundheitswesen* 45 (1983), p. 233 s.

[3] Cf. *ibid* , 44 (1982), p 560 ss

[4] Cf , among others, Heinrich Schipperges, " Vom Physikus zum Arzt für Gesundheit, " in *Das öffentliches Gesundheitswesen* 45 (1983), p.290 ss.

[5] Cf. *ARP* 5 (1985), p 253

[6] HEINRICH SCHIPPERGES, *op.cit*.

[7] D GROTJAHN, *Soziale Pathologie* (Berlin, 1912), p 681

The Right to Health in Developing Countries

Patrizio Schmidlin

International solidarity, which is expressed in an outstanding way in the aggregate of countries forming the United Nations and other world organisms, along with the technical assistance the most industrially and economically advanced States furnish to the less privileged, is inspired by a basic principle that is solemnly affirmed in the universal Declaration of Human Rights and takes on the value of a legal bond in the Pact on Civil and Political Rights.

It is the principle of the substantial equality of human beings and of the general applicability to all of fundamental protection of the individual in his physical, psychological, moral, and intellectual being. Included in this framework of protection is the right to health, which precisely regards man's being in its organic, psychological, and mental structure.

This right, together with those involving individual freedoms, shapes the conception which the modern world has adopted on the value of individual " being " and the opportunities which must be offered to everyone to evolve towards the fullness of being and protect it in the course of life.

The realization of this great preliminary objective, on which the attainment of every other civilized goal depends, posits the existence of two spheres of activity in which the State and public structures are called to work and watch so that private individuals will be given the space to act.

On the one hand, we need to have mechanisms functioning in defense of rights and, on the other, the preparation of structures and procedures aimed at providing the services which are indispensable to help the individual to continue to be what he is and to evolve towards an ideal of physical, psychic, and mental health.

To the first sector belong the laws and institutions which prohibit and punish damage to these primordial goods of the human person such as, first of all, penal laws and institutions of the police and judiciary.

To the second belong the laws, structures, institutions, and initiatives intended to offer individuals the goods and services which are indispensable to reach the state of health and to conserve it.

From the moment in which advances in civilization shaped the individual goods to which we have referred—such as the rights of man—there has followed the assertion of a corresponding duty for third parties with respect to these rights, a most significant duty which ties in with both the public and private domains.

Some of these duties are incumbent upon the two—let us recall the duty not to cause harm; others fall specifically to public institutions.

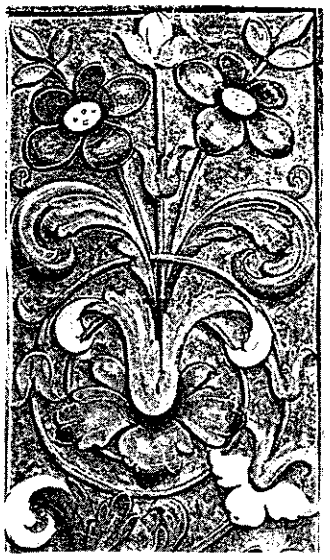
In a classification of a general character we may distinguish between the public obligation to supply all that is needed to maintain the human being's physiology and development and the obligation to supply the services needed to respond to the demands imposed by pathology.

These public duties are primarily structured as obligations of the institutions proper to the organization each society has provided for itself in the domain of its own political autonomy.

States, governments, and the authorities representing them centrally and locally in their sovereignty are directly responsible for fulfilling these duties.

We do not wish to engage at this time in a juridical examination of the positive configuration of such obligations and the consequent rights; i.e., we shall omit all consideration of what they should be within State organization, the extent of guarantees and protection, and whether or not such factors are to be construed as real legal demands in a proper sense, incompliance with which entails responsibility for the defaulting party.

This is the major topic—quite familiar to students



of the sciences of constitutional, civil, and administrative law—of the distinctions involving interests which are simple, legitimate, occasionally protected, or subjective. I feel, however, that it is indispensable to observe in this regard that, beyond the considerations of legal science, there is a concrete reality which distinguishes countries and orders them progressively along the curve of socioeconomic development.

It is undeniable—whatever the political and moral tensions may be regarding ideals of full, unconditional protection—that the real situation characterizing each country also has a determining influence on juridical configuration of the interests in question and their protection.

In this perspective, there arises an interesting consideration on the characteristics assumed by international cooperation in development, which in fact enables us to pose a series of precise questions and formulate answers that will indicate the true nature and effective function of the different types of cooperation possible.

Leaving aside all theorization and referring directly to Italy's commitment, we may unhesitatingly assert that the political and moral motivations which have indicated the path of developmental cooperation to our country are linked to an ideal wherein the recognition of the substantial equality of all human beings is accompanied by the feeling that it is our duty to express solidarity with those States which, against their own wishes, as a result of technical-economic deficiencies, cannot manage to ensure for their citizens the satisfaction of their rights to the fullness of being, among which we define those referring to their physical, psychic, and mental patrimony as " the right to health. "

It is useful at this point to clarify that the orientation of cooperative action may tend towards either final or intermediate objectives. It always acts on the assumption that the country receiving assistance should—and wishes to—protect the rights in question and intends to upgrade the extent and quality of such protection as socioeconomic conditions evolve.

We thus have action in this field involving the creation of facilities (hospitals and medical centers, for instance) and of mechanisms for supplying services (such as nutrition, education, and vaccination); in addition, we have a type of service aimed not at substituting for what the State's internal apparatus should do, but at offering it direct aid so that it will be in a position to act itself (support for central health organisms).

The different types of action do not represent alternative choices, but rather differing moments in an aid policy aspiring to produce the definitive result of enabling the country to act on its own.

To conclude this digression on the principles underlying the idea of the right to health, we may affirm that the concept to which reference is made for the citizens of the most advanced countries legally and those with greatest socioeconomic progress is the same as that which should be applied for the citizens of less privileged nations; if there are in fact different levels of protection of the right to health in the two contexts, this may be accepted only by virtue of the limitations on goods and capacities available in the less developed countries; this recognition does not, however, constitute acquiescence to the diversity, which, however justified, is objectively unjust.

With this in mind, it may be stated that developmental cooperation in this highly sensitive field comes down to striving to transform into factual realities an ideal acknowledgement of the equality of all individuals with respect to the right to health.

Minister
PATRIZIO SCHMIDLIN
General Director for Cooperation at the Italian Foreign Affairs Ministry

Political Strategies to Promote and Defend Health

You know that medicines, when well used, restore health to the sick; they will be well used when the doctor, together with his understanding of their nature, shall understand also what man is, what life is, and what constitution and health are. Know these well and you will know their opposites; and when this is the case you will know how to devise a remedy.

LEONARDO DA VINCI, 1452-1519.

Thomas Adeoye Lambo

Since the other contributors to this Conference will address many aspects of our subject, my paper will focus rather abrasively on the dialectic of Man's future in spite of the socio-economic and political constraints that surround him and alienate him, impede his self-reliance, and undermine his rights to determine his future. I would like to examine the problems of man from the standpoint of health politics, social reform, economy, and culture.

A lot has been said of our specialty losing its bearing in a world which becomes more and more difficult to understand. We needed a poet to speak so pointedly about the philosophy of health and the failure of modern medicine to cope with it. The eminent poet Pierre Emmanuel, representing the French Academy, pursued this theme. Medicine today, he said, enjoys the prestige of the magician and electronic engineer, yet it loses sight of the indivisible individual, fails to correlate old wisdom and new knowledge, and does not recognize the existence of the potentially sick. The fact that modern man does not have time to be ill adds to his inherent fear of suffering and death, already aggravated by the tendency to segregate the sick in hospitals which virtually become ghettos. He remains alone and dismembered before physicians who ask " What to treat? " rather than " Who to treat?"

Globally, in recent years, impressive advances have been made in basic and applied sciences, especially over the last two to three decades. Industrialized nations have leaped forward in the fields of micro-electronics, telecommunications, automation, informatics, new materials, new energy sources, space technology, and biotechnology. The combined impact of such developments is likely to bring about major changes in the structure of most social sectors, including the health sector.

In medicine and health we have also made spectacular and revolutionary advances; for example, we now possess new and far-reaching knowledge in molecular biology, molecular genetics, chemistry, virology, immunology, and bio-physics, and this arsenal of knowledge presumably should not only promote health and prevent disease, but ensure quality of life.

Biotechnology has been termed " new science for the Third World " since it could become the most revolutionary scientific event for the developing world. However, very few developing countries have the scientists and research resources to embark upon the most sophisticated work in biotechnology, in spite of its enormous potential benefits. It would be foolish to think that the scientific and medical development which has revolutionized industry, agriculture, and weapons would prove useless when applied to health of the family, of the nation, or of the human race, if it were not for political, ideological, social, economic, psychological, and cultural differences which limit either its application or acceptability.

We are up against the toughest problem of re-adjustment by the wealthy countries to the needs of the Third World that mankind has ever faced. Will the wealthy countries be willing to adjust to a drastic scaling down of privileges or will they continue to work for an opportunity to recapture power?

Never before has the impact of new demands been so insistent; never before has the pressure of new, innovative social, political and economic conditions been so intense. It is necessary to probe a little deeper into man with our research in order to estimate more accurately the emotional resistance which may have to be taken into account in our attempt to bring about this desired change.

It is obvious that a mighty task faces us now and for some

time to come. There are evident manifestations of malaise with our present civilization, during which man's capacity to survive on this Planet is being tested. The rise of modern science and technology has not removed or modified the basic human predicament, which the insight of the ages has discerned; rather, it has underlined it. Men will go to war to heap up riches for themselves for the same motives and with the same passions as in the days of old; they marry and give in marriage as in the days of Noah; they still desire to be " like God, " as in the days of Nineveh and Tyre.

That is why the ancient historians, artists, prophets, and poets can tell us just as much about our basic human existence as can the modern ones — and it makes no difference at all whether they believe in a Ptolemaic or a Copernican or an Einsteinian cosmology or, for that matter, as in Africa, whether they believe that the earth rests on the back of an elephant standing on a tortoise.

To me, perhaps the most impressive development in modern science is the new knowledge which we are beginning to acquire concerning the nature of man. It is no overstatement to say that scientific research has revolutionized our outlook on the starry heavens above us or the earth beneath our feet more profoundly than our ideas concerning ourselves.

The supreme and all-important elements of happiness and fullness of life are subjective possessions, such as noble character, a capable mind, an easy disposition, and a well-organized and healthy body; and it is these " gifts, " many non-Western cultures rightly insist, that should be cultivated and preserved, even at the expense of wealth and emoluments.

In the past, man has usually been regarded as a rational, sensible being, tending normally to prefer a prosperous, orderly, and peaceful life if he is placed in fitting surroundings

and if advantages of such an existence are properly impressed upon him.

Philosophers claimed the power of " reason, " economists depicted their common-sense " economic man, " while statesmen urged the traanscendent value of liberal institutions. Even today most of our political and social efforts are quickened by the belief that if mankind can only get enough wealth, leisure, security, justice, and similar favorable conditions, all will be well, and peaceful progress will be automatically ensured. This certainly will go a long way towards resolving our major dilemmas and conflicts that tend to engulf us. We must, however, not forget that the truth of the matter is that man is a walking paradox, a baffling compound of diverse tendencies. It is this strange combination of the saint, the sage, the child, the barbarian, the savage, and even the pre-human with which we have to deal in all life's problems.

What I am trying to say today I am sure is not new, and, therefore, the best I hope to achieve is to restate the problem with differential and perhaps greater emphasis. I would like to look at Man within his total environment, and the question I would like to raise is: Can medicine and its allied disciplines become an important instrument and mechanism which could assist in, or contribute to, our total effort towards making man maintain his unique central position as " the means and the end of development, " as a living reality and an aesthetic, ethical, moral and human person, in the infinite variety of his needs, his potentialities, and manifold aspirations?

The current concern and search for new dimensions of man has clearly shown that our present institutional systems, and maybe our civilizations, have failed to meet the inner needs of man. There are signs of unresolved ambiguities and

manifest alienation from the roots. Our present estrangements from our organic rhythms can be traced to the present disturbances in our systems which continue to give rise to a sense of emptiness, meaninglessness, and nothingness. It has created, according to many observations, *a state of existential vacuum*. In other words, the present situation today continues to hinder man from realizing the potentiality of the " real self " and the fostering of individual identity and development. Our current political, economic, and social systems, although remaining dialectical, are nevertheless fraught with contradictions, conflicts, and unpredictable reversals of traditional value systems.

There have been many warning voices in recent times: Charles Fourastier, Pierre Mass, Alvin Toffler, The Club of Rome, Gösta Ehrenswärd, Jay Forrester, Dennis Meadows, Waddington, John McHale, to mention only a few. During the nineteenth century, personalities as varied in outlook as Carlyle, Cardinal Newman, Ruskin, and Tolstoy — however much they differed in their positive program for human betterment and social progress — agreed to condemn certain erroneous beliefs and myths about human progress, for example, the belief in continuous exponential growth of technology.

Other zealous prophets of woe ranged all the way from Bertrand Russell to Mr. Chesterton and Mr. Bryon. Russell based his disquieting conclusions not merely on recent tendencies in the scientific and technological movements, but also on innate limitations and shortcomings of human nature, which may render our modern technology more of a curse than a blessing. What is defective is not science and technology, but the variety of opportunities for useful and constructive purposes to which technology could be put in order to enhance human dignity and advancement for all in the social and economic spheres.

Whether these warning voices are true or false, one thing is certain: today, sound diagnosis of our social ills has become possible and is becoming increasingly accurate. In fact, much of our so-called " literature of despair " is not so much pessimism as clinical examination with penetrating insight into their uncertain prognosis.

I do not believe that science and technology themselves are the problem, but the use to which we put them. The relativity and quantum theories, the theoretical foundation of modern physics, are generally held to be abstract systems of ideas, inaccessible to the layman, which no longer show much evidence of their *human origin*. It is, however, the human aspect of developing science more than anything else which the correspondence between Max Born and Einstein rendered intelligible.

His Holiness Pope John Paul II put it more strongly and succinctly when he wrote in his *World Day of Peace Message* on 1 January 1984: " Although the tension between East and West, with its ideological background, monopolizes the attention and fuels the apprehension of a great number of countries, especially in the northern hemisphere, it should not overshadow another more fundamental tension between North and South which affects the very life of a great part of humanity. Here it is the question of the growing contrast between the countries that have had an opportunity to accelerate their development and increase their wealth, and the countries locked in a condition of underdevelopment. This is another gigantic source of opposition, bitterness, revolt, or fear, especially as it is fed by many kinds of injustice. "

Nothing more clearly illustrates the need to reform the present imbalanced and lopsided socio-economic order, as well as to promote total human well-being, than the recurrent crises that have overtaken the world during the last decade.

Throughout history one could trace both the concepts of health and the specific modes of living which were advocated to achieve it in Greece, Rome, the medieval period, the Renaissance and Reformation, and the era of industrialization down to the present day. One notes how these have applied to the different social classes in each society, and how they relate to definite political philosophies.

It is now over 40 years since the United Nations Charter was signed and inaugurated in an international effort to establish a new international order. This constituted one of the most striking and hopeful features of the U. N. Among many obscure pronouncements on humanitarian ideals and the kinship of men were some concrete instruments aimed at achieving greater human ends, or meeting human aspirations: they sought

to guaranteee security and needs in a new human context, and to formulate a policy by the great " civilized " governments to extirpate social and economic slavery from the world.

These aims were thought to be right. What is right, however, need not necessarily be true. Today that international order has reached a critical turning point; its hopes of creating a better life for the whole human family and of transforming society have turned out to be illusory. It has proved impossible to meet the minimum health and social needs. On the contrary, more are today hungry, sick, homeless, and illiterate than when the U.N. was first set up to erase all these inequalities and the dearth of opportunities. At the same time, new and unforeseen concerns in the field of human rights have begun to darken international prospects. Environmental degradation, the lack of a clearcut strategy to improve human conditions, the questionable moral conduct of big powers, and the rising pressure on resources — all these raise the question about whether man's social integrity may not be at risk.

And to these preoccupations must be added the realization that the next three decades may bring a doubling of world population Another world on top of this one, equal in numbers, demands, and hopes.

These critical pressures need give no reason for despair over the human entreprise, provided we undertake the necessary changes. The first point to be underlined is that the failure of world society to provide " a safe and happy life " for all is not caused by any present lack of physical resources. The problem today is not primarily one of absolute physical shortage but of economic and social maldistribution and misuse; mankind's predicament is rooted primarily in political, economic, and social structures, and in behavior within and between countries.

Much of the world has not yet emerged from the historical consequences of almost five centuries of colonial control with concentrated economic power so overwhelmingly in the hands of a small group of nations. To this day, at least three-quarters of the world's income, investment, services, and almost all of the world's research, are in the hands of one-quarter of its people. The developing nations are still struggling with the problem of how to bring about socioeconomic equity and a palpable improvement of their lot.

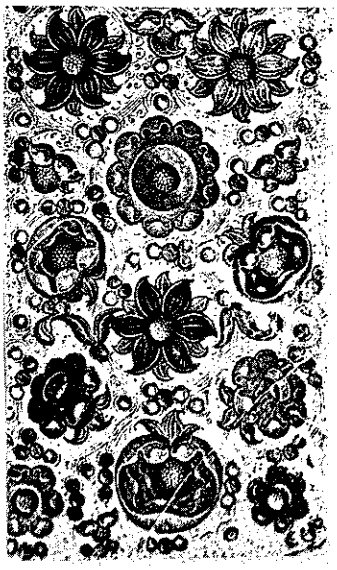
What is happening around us shakes our complacency, challenges our faith in human progress, and imbues us with an intense feeling of shame, doubt, and guilt. In a world where the gigantic scientific and phenomenal technological achievements command our admiration and almost fetish acceptance, we are witnessing an intolerable degradation of man. Our pride in belonging to a generation that for the first time since the genesis of man has set foot on another planet cannot, however, disguise the awful truth that it may be easier to travel to the moon than to erase from the surface of the earth the image of inevitable poverty, human exploitation, injustice, and the degradation of human welfare.

We are living in an age in which, according to Thomas Carlyle, the spiritual malaise can only be matched by the physical disease of society aggravated by laissez faire:
" Wealth has accumulated itself into masses; and Poverty, also in sufficient accumulation, lies impassably separated from it: opposed, uncommunicating, life forces in positive and negative poles.... How much among us might be likened to a whited sepulchre: outwardly all pomp and strength, but inwardly full of horror and despair and dead men's bones! Labor's thousand arms, of sinews and of metal, all-conquering everywhere, from the top of the mountain

down to the depths of the mine, and the caverns of the sea, ply unweariedly for the service of man: yet man remains unserved. He has subdued this Planet, his habitation and inheritance: yet reaps no profit from the victory. Sad to look upon: in the highest stage of civilizations, nine-tenths of mankind have to struggle in the lowest battle of savage or even animal man, the battle against Famine and against ruthless exploitations and social injustice."

These are the words of Thomas Carlyle during the winter of 1831-32 in his London lodging. He shared the plight of those who, like Friedrich von Schlegel, rebelled against materialism and struggled "To be Persons, not machines," to have respect for man, for freedom, for creativity, for diversity and variety, and for human understanding. Carlyle developed this point eloquently in *Signs of the Times*, which remains a classic document on the spiritual and social history not only of his period but also of our contemporary life. Carlyle was not a Medical Man, but obviously had a social consciousness and political sensitivity unrivaled by many of my colleagues today.

Our first concern is to redefine the whole purpose of development. This should not be to develop things but to develop man. Human beings must meet basic needs: food, shelter, clothing, health, education. Any process of growth that does not lead to human fulfillment — or, even worse, that inhibits it — is a travesty of the idea of development. We are still at a stage where the most important concern of development is the level of satisfaction of differential needs for the poorest sections in each society, which can amount to as much as 40 per cent of the population. The primary purpose of socioeconomic growth and development should be to ensure improved conditions for these groups. A development process



that benefits only the wealthiest minority and maintains or even increases the disparities between and within countries is not development. It is exploitation. And the time for starting the type of true development that leads to better distribution and to the satisfaction of minimum but effective needs for all, is today. We believe that the pious hope, held for more than 40 years, that rapid economic growth benefiting the few will "trickle down" to the mass of the people has proved to be illusory. One is justified, therefore, in rejecting the idea of "growth first, justice in the distribution of benefits later."

For those who have at heart the advancement of man, especially as it relates to health, the first and strongest feeling must be gratitude to the spirit of the Alma-Ata Conference held in 1978 on Primary Health Care, judiciously followed by "Health for All by the Year 2000," which is to me the outward sign by which the future historian will trace the onset of the health revolution. These are great historic moves to meet the need for a new, integrated, and compelling vision of human destiny.

The World Health Organization's attempts to foster, through the United Nations System, the emergence of humanity in a new and superior state, and to construct the picture of man's development as involving an inevitable progress towards total well-being, have broken down the traditional barriers between medical disciplines. It is not even a question of building bridges between immunology and cancer, between vector biology and malaria and other parasitic diseases, between mental health and human reproduction, but rather of fusing together these programs and these basic scientific disciplines in a fundamental way.

It seems to me that the outstanding feature of contemporary world affairs is one of profound and general disharmony

between the two polarized groups — the " haves " and " have-nots "; the rich are getting richer and the poor are getting poorer and more frantic, resulting in endless malajustment, perplexities, and conflicts. The immensity of the human problems calls for revolutionary thinking and action unprecedented in human history. In my view, such a " revolution " must affect every phase of human activity, girdle the entire globe, and involve all mankind in order to produce adequate human resources, dynamic and contented new societies, with the support of technologies that are not divorced from basic human realities.

The World Health Organization's bold stand on the future and well-being of man should not be seen as a cosy conversation-piece for self-indulgent intellectual soirées. In the strategic plan for Health for All by the Year 2000, the analysis of human existence and the quality of life incorporates, in its structure and content, an inescapable call for decision and action on the part of Member States and governments. No Member State can in fact opt for neutrality before this stream of life. It is an undertaking which explicitly or implicitly involves any social, cultural, or other motivation which is authentically concerned with the future of man and his total well-being on this planet. The strategy is incontestably a pragmatic and pressing one, and a far cry from mere utopianism. It has, futhermore, opened up a perspective for constructive and fruitful dialogue on health matters between Member States, irrespective of whether they are socialist or capitalist, developed or developing.

WHO lines up squarely and unequivocally with the unprotected, the deprived, the exploited, not only in their rejection of mere materialism but also in their insistence on the priority of the quality of life, of love, and of hope.

Despite the apparent polarization that is occurring, despite disenchantment with the prevailing international socioeconomic order, despite allergic reactions to exploitation and alienation, there is still, at the level of health and the level of a collective search for solutions to many major diseases, " unity. " Hope in the growing unity of mankind can never be misplaced hope.

My contribution to this Conference is an attempt to explore and circumscribe certain areas of meaning which are of prime importance to our understanding of the social and economic forces of today's world. Despite the shortcomings and undeniable limitations of this approach, it does, however, represent an attempt by a medical scientist to project an overview by arguing again and again for the need of modern man to develop, animate, and sustain a dynamic future-oriented vision of himself and the universe around him.

I believe it should be possible for Medicine to survive its present moral crisis and become a positive instrument for the promotion of health, security, and freedom of individuals, to free men from servitude (to nature, to ignorance and disease, to other men, to institutions, to beliefs) considered oppressive. The aim here is to release men from the bondage of these servitudes and/or to enhance their opportunities for self-actualization, however conceived, and, finally, to assist in the formulation of the perceptions of our total human situation.

Our aim, as I see it, is to participate in any attempt to construct a new, more correct and more living picture of our society. It is true that the achievement of this aim may not depend on our volition, but it does depend on us whether we seek it. Do the decision-makers in our society have adequate and correct information about psychiatry to have confidence and trust in this discipline as an actual or even potential instru-

ment of change? What kind of image does contemporary medicine provoke in the minds of the public today? Have we tried to educate and inform the various communities making up our society to participate at the appropriate level in an enlightened system of health care? Do we have such a system?

I apologize if I sound presumptous in this talk by enlarging the scope and responsibility of medicine and widening its traditional domain, but I hope you will bear with me in expressing my opinion. After all, Berkeley rightly says that few men think, yet all have opinions.

It is equally important to constantly keep vigilance on the level of these moral, personal and ethical principles of action in order not only to increase medicine's prestige and integrity, but also to prevent its abuse as an instrument of coercion, oppression, and exploitation. Its power to prevent and control disease, its scientific status, will be weakened and its image marred if its practice is devoid of sound moral, ethical, and human principles universally applied, especially if its practitioners continue to shy away from *social action,* from sensitive social and economic issues, and from broader parameters of health and disease. Some will question the need for these qualities and new obligations. To these skeptics, I will say your judgment is correct only if medicine and its pursuits are regarded as being wholly scientific; that is, its practice should be limited to illness and its prevention. Evidently, we cannot fix the due confines of medicine by allocating to it a strictly prescribed field. Therefore, the question raised here today remains a critical one and is obviously relevant and inescapable if we are considering the role of medicine within the expanded field of modern concepts of health and disease, of human freedom, human well-being, and human dignity.

No one would pick a quarrel with the warning of Rothman (in the *Future of Psychiatry*, edited by Paul Hock and J. Zubin) when he writes: " ...Our philosophy of science [should] become more critical, experimental, more deductive and inventive, awaiting a Harvey to catapult us into the Seventeenth Century.... " Beyond that the medical practitioner must sense the social, political, and humanistic issues — critical issues whose inner articulation is for the most part already incomprehensible to him. This is why we must agree with Sir Francis Bacon (1858), when he observed " that many excellent and useful matters are yet laid up in the bosom of Nature ... quite out of the common track of our imagination, and still undiscovered; but they too will doubtless be brought to light in the course and revolution of years. "

One of the greatest challenges to all of us today as leaders is how to remain human in the midst of a gigantic and astronomical mechanical world, especially in efforts to innovate for balanced and total development, and in the quest to acquire, translate, and transform scientific and technological knowledge into viable and pragmatic policy — a policy which could provide the *means* to meet the changing nature and wide variety of human needs (especially the individual's needs, aspirations, hopes, and fears), and, finally, enlarge the scope of participation in the system and give meaning and value to the whole process of change.

It shows the way in which human, political, and ideological problems are intermingled in our attempt to promote health, and for this reason the new way or method of measuring health plays an important part in the World Health Organization's strategy for Health for All. All of us are interested in the social phenomenon around us and are actively participating in the history of our time, suffering and

hoping that things will change.

As I see it, especially from the point of view of the Third World, health care is not an exclusive prerogative of the medical profession; it has social, ideological, political, and ethical imperatives. The development of a reliable system for health care delivery to the peripheral areas of developing countries, where the needs are greatest, is determined by political decisions, enlightened policy brought about by ideological imperatives which take into consideration the totality of man's development. The technologies to be used to achieve this transition should be capable of operating within the meagre financial and material resources of the poor communities of the Third World; be adapted to the available resources in human skills within the communities of the Third World; be socially and culturally acceptable; and, lastly, be functionally efficient. This is what we now term " appropriate technology. "

THOMAS LAMBO
Deputy General Director of WHO

Every Sick Person Is My Brother or Sister

Before all, and above all, attention should be paid to the care of the sick so that they shall be served as if they were Christ himself.
RULE OF ST. BENEDICT

Edmund Pellegrino

1.0 Jesus' Call to Healing

Every Christian will readily agree that the sick person is his sister and brother. After all, are we not all sons and daughters of the same Father? But, as in our immediate families, so in the human family, the sick person is brother and sister in a special way. The one who is sick has a special claim on our solicitude, love, and compassion, for without them the sick cannot fully be healed.

Jesus gave us the most compelling examples of the special solicitude we should show the sick. Healing filled his daily life. He was always among the suffering. Half of Mark's Gospel is devoted to narratives of healing. In Luke He teaches us by the parable of the Good Samaritan that the stranger is our neighbor who deserves not only our love but also our sacrifice. For Jesus, healing the sick was intrinsic to his salvific mission. And so too it must be for those who profess to be his followers.

One of the most beautiful evocations of Christ's compassion for the sick is the depiction in the first chapter of Mark: " Now when it was evening and the sun had set they brought unto him all who were ill and who were possessed. And the whole town gathered at the door. And he cured many who were afflicted with various diseases and cast out many devils... " (Mark 1:32-34). This is a scene repeated many times over. Wherever he went, tired, dusty from the road, pressed in upon by human needs of all kinds, he always had time for the sick, the disabled, and the handicapped.

The Gospels also teach another lesson: Concern for the sick and their healing involved the whole community. It was their families and friends who brought the halt, the blind, and the deaf to Jesus. It was they who begged his help insistently. At Capernaum they even dismantled the roof to lower a paralytic into his presence.

Christ's healing itself was a community affair. He healed in public, with family and friends looking on and sharing the experience.

We who profess to be Christians are committed to emulate Christ's example. As individuals and communities we are called to " put on Christ " (Gal 3: 27), to see the sick as he saw them, to make the healing ministry a part of our lives.

2.0 Sickness in Today's World

What does this mean in our times, which are different in so many ways from Jesus' time?

In our world the sick are often removed from our immediate presence to the hospital, hospice, or nursing home. Their care is assigned to strangers and professionals. They suffer and die surrounded by the apparatus of technology, often unable to communicate their needs. Their friends and families live at a distance. It is hard for us to be present to the sick in their moments of greatest need.

Today our attitudes to sickness are vastly different from those in Jesus' time. Sickness has become a scandal, a contradiction to our frenetic pursuit of the cult of health, youth, and pleasure. We expect medical miracles to exorcize illness. But the sick person is a brutal reminder of the finitude and frailty we want so much to deny. Rather than being our brothers and sisters, the sick have become alien to us — inhabitants of a world that is not ours.

The response of the Christian community is vastly different too. Traditionally, we had thought of care of the sick as a social need impervious to the marketplace — a work of mercy, not a commodity to be traded or delivered. Now we worry instead about the resources the sick divert from our other projects. We talk of rationing the care we give, especially to the most vulnerable among us — the poor, elderly, the chronically handicapped, the infants, the mentally ill, and the retarded. We shrink from the sacrifice — of our time, emotions, energies, and money—that the care of the sick so much requires. So urgent has the economics of health care become that some religious orders and dioceses even contemplate withdrawing from this vital ministry.

But none of the changes in society or the technology of medical care since Jesus' time can alter the call Jesus and the sick themselves press upon us so insistently. They call us as Pope John Paul so precisely put it to " humanize sickness, to heal the sick as a creature of God, as a brother in Christ. " [1] This we can do only if we become agents of God's mercy and compassion. But we must make our compassion effective in our action. We must in the ministry of healing as in everything else " ... permeate and improve the whole society. " [2]

3.0 The Meaning of Compassion

Compassion is the leitmotiv of Christ's own healing. We need to understand that his compassion is more than pity or sympathy. It transcends social work, philanthropy, and government programs. It is the capacity to feel, and suffer with, the sick person — to experience something of the predicament of illness, its fears, anxieties, temptations, its assault on the whole person, the loss of freedom and dignity, the utter vulnerability, and the alienation every illness produces or portends.

True compassion is more than feeling. It flows over in a willingness to help, to make some sacrifice, to go out of one's way as the Good Samaritan did. " No one can help anyone without entering with his whole person into the painful situation; without taking the risk of becoming hurt, wound-

ed, or even destroyed in the process. " [3]

The Christian must recognize with the utmost humility that compassion is a human quality shared by many outside the Christian community. We need only recall how the Stoic physicians of old had already spoken of the sick person as a brother or sister deserving of loving care. [4] What is different for the Christian is that compassion is an " obedient response to a loving Father, " not " a noble act of self sacrifice. " [5]

Compassion entails a comprehension of the suffering experienced by another. When we have suffered ourselves we are sometimes better able to understand it in others. As Unamuno says, " Suffering is the substance of life and the root of personality, for only suffering makes us persons, " [6] or as the Italian proverb says, " Illness tells us who we are. "

Compassion for the suffering of others thus enriches our own understanding of what we too must some day pass through. It teaches us that " ... merciful love is never a unilateral act... " [7]

Compassion helps us, therefore, to realize that our sick brothers and sisters are not alien to us. They are still very much part of the human family. They are vital to our own spiritual growth. The healthy need the sick to " humanize " them as much as the sick need us to humanize their sickness. For it is " ...anguish experienced in ourselves which reveals God to us and makes us place our love in him. " [8]

4.0 Compassion in Action

" Be compassionate as your Father is compassionate " (Luke 6: 36). How does this translate into action today for the health professional, for the whole Christian community and its institutions?

4.1 Compassion and the Health Professional

For health professionals compassion is the quality that separates a mere career from a true Christian vocation. It enables us to recognize that, effective as our science and technology can be, they do not remove suffering. The sick cannot escape the confrontation with mortality which even a minor illness may entail. Human illness is always illness of the whole person — body, mind, and spirit.

The compassionate physician and nurse recognize that illness transcends biological aberrations in organ systems. Illness fractures our image of ourselves, upsets the balance we have struck between our aspirations and our limitations. Illness is nothing less than a deconstruction of the self.

Compassion enables the healing to reconstruct the person, to make him " whole " again. We must heal the attack on the spirit as well as the attack on the body. The particularities of culture, ethnicity, language are what makes illness a unique experience for each of us. True healing can only take place when all of these particulars are taken into account.

Compassionate care also means that the patient who cannot be cured by medical sciences — the chronically ill, the mentally retarded, the psychotic — may still be " healed. " Even the dying patient can be healed if we help him to understand the meanings of suffering — the opening it offers to reconciliation, atonement, and sharing of Christ's suffering on the Cross. This is unique to Christian healing and notably absent in even the nobler expressions of healing outside the Christian tradition.

4.2 Christian Compassion and Medical Ethics

A commitment to Christian compassion shapes and focuses the way we interpret and apply the three major principles that dominate medical ethics today — beneficence, justice, and autonomy. It makes all of medical ethics subservient to one ordering principle — to the virtue of Charity. [9]

Thus beneficence must go well beyond the minimalistic interpretation of avoiding harm. It entails helping others even when that involves inconvenience, sacrifice, and risk to our self-interest. This is of urgent importance today when altruism and self-interest so often conflict. We see that conflict in many guises — in physicians refusing to treat AIDS patients for fear of infection or withholding obstetrical and neurosurgical care for fear of malpractice, or acting as medical entrepreneurs, gatekeepers, or striking for higher pay. All of these practices deny the primary obligation of advocacy of the patient's interest, which is at the heart of any Charity-based medical ethic. Effacement of self-interest is crucial if we really treat the sick as our brothers and sisters.

The principle of justice is likewise transformed. It is no longer that strict accounting of what is owed which separates mercy from justice. Mercy is the very essence of the Christian message. As Pope John Paul II has pointed out, " True mercy is, so to speak, the most profound source of justice. " [10] Christian justice is charitable justice with its roots in God's love for all persons and its fulfillment in the Paschal mystery. [11] On this view all humans have just claims on those things society can provide that ensure the dignity of the person and the value of each human life.

Finally, Christian compassion comprehends and respects the moral claim of autonomy. It recognizes the dignity of the sick as full participants in their

own healing. We violate the humanity of the sick when, even in the name of benevolence, we ignore their decisions and their spiritual or personal values. This is the very antithesis of the humanization of illness compassion seeks.

But this respect for the dignity of choice is not unilateral. The sick person must see the physician and nurse as a brother or sister as well. The patient cannot ask them to violate their moral beliefs. Patient and physician are partners in the act of healing.

When Charity is the ordering principle it raises healing care to an act of grace, and the profession of medicine to a Christian vocation. Even practices that are not positively immoral become unacceptable — excessive vigor in collecting even just fees, impatience and insensitivity with " difficult " patients, or failing to be available and accessible. To treat the sick as brothers and sisters calls for a level of dedication above the ordinary.

Still, all who care for the sick must remember that well people are also our brothers and sisters, equally deserving our solicitude. We must balance our duties to family, self, and community. There is no universal formula to tell each of us where to strike that balance. We do know that Charity must be our guide here too.

4.3 Compassion and the Healing Community

The responsibility for healing is not to be totally delegated to professionals or to social or governmental agencies. It must be shared by every member and every level of a Christian community.

The family remains the basic unit of Christian healing. Here those intimate dimensions of faith and love are to be found that are impossible to attain with strangers or institutions. Here, mutual stewardship for loving care is best expressed. Here the agonizing decisions about costs, discontinuance of life support measures, or institutionalization of the aged must be made with compassion. Here too, the sick can be supported by prayer, celebration of the Eucharist, and Anointing of the Sick. Here, too, Job's repeated question — Why, O Lord, why? Why me? - is most insistently asked and must be most sensitively answered.

But the family should not be alone. The healing resources of the parish must be there also to relieve, strengthen, and help, through visits to the sick by friends and the clergy, and by offering volunteer services, financial assistance, help in homemaking, etc.

Finally, family and parish are embedded in the larger community. If it is to be truly Christian the whole community must make a collective commitment to charitable justice. [12]

It must see to it that the care of the sick which is among the more rudimentary goods for a fully human life is distributed equally. Such a society cannot relegate healing obligations to the caprices of the marketplace, competition, or medical entrepreneurs. It must see to it that social institutions and mechanisms are in place to ensure a compassionate distribution of resources for care of the sick.

In a Christian healing community medical knowledge is not proprietary. It is held in trust by professionals and society. The whole community must make the fiscal sacrifices involved in decisions to allocate resources according to the demands of compassion and not exigency.

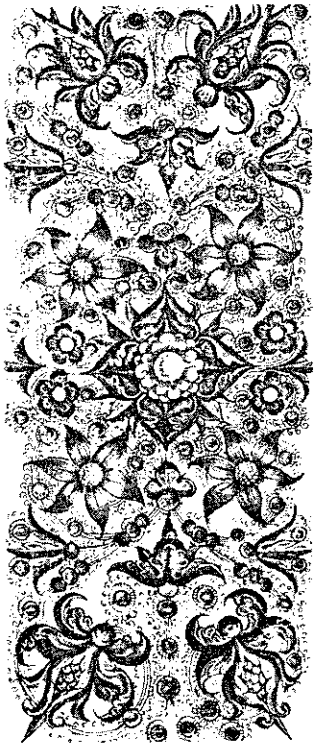
Illness is itself disruptive of the community. God is the healer not just of individuals but of the whole community. The whole community in turn must participate in its own healing. It is God' s love for the People of God which is the ultimate tap root for the compassion we are called upon to show

for our sick brothers and sisters.

The Catholic Church, in its religious orders and laity, has given exemplary witness of concern for the sick. Yet there remains much we still must do, if we are to ensure that the health care ministry is to remain " ... one of the most vital apostolates of the ecclesial community and one of the most significant services which the Catholic Church offers to society in the name of Jesus Christ. " [13]

In the years ahead more of the responsibility must fall on the shoulders of the laity. [14] We must make the personal and financial sacrifices to fill in the gaps left by philanthropy and government. We must ensure that fiscal exigency will not drive Catholic hospitals into either moral compromise or bankruptcy.

When we are in doubt or falter — for the task is formidable — we can turn to the Holy Father's inspiring words on human suffering. And we can also thank him for establishing a mechanism by which the Universal Church can re-enforce the entire Christian community in its efforts to be a true healing community.



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[4] OWSEI TEMKIN AND C LILLIAN TEMKIN (eds.), *Ancient Medicine. Selected Papers* of Ludwig Edelstein (Baltimore: Johns Hopkins Press, 1967), pp. 345, 337-340.

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[8] DE UNAMUNO, *op cit* , p. 227.

[9] E D. PELLEGRINO, " Agape and Ethics: Some Reflections of Medical Morals from a Catholic Christian Perspective, " in *Catholic Perspectives in Medical Morals* (Boston: Reidel, in press), edited by E D Pellegrino, J. Langan, and J C. Harvey.

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[12] POPE PAUL VI, *Encyclical Letter on the Development of Peoples*, March 26, 1967 (Washington, D.C : United States Catholic Conference, 1967).

[13] POPE JOHN PAUL II, " Address to the Catholic Health Association, " in *L'Osservatore Romano* (September 21, 1987), p. 19.

[14] KEVIN D O'ROURKE, *Reasons for Hope: Laity in Catholic Health Care Facilities* (St. Louis: The Catholic Health Association of the United States, 1983).

[15] POPE JOHN PAUL II, *Apostolic Letter on the Christian Meaning of Human Suffering* (Washington, D C : U.S. Catholic Conference, 1984).

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Third Session

Man and Medicine

Remarks by the President of the Session

I regard the problem of *man and medicine*, of the *dehumanization of medicine*, as it has been termed, as extremely important.

I am rather optimistic in this connection. I do not feel medicine today is more dehumanized than in the past. I feel medicine has recently brought immense benefits.

I do not consider the dangers to be as serious as we are generally told by the mass media.

I think it is indispensable, most important, to always pay close attention to the dangers, and this has been done in the past. But, as I had occasion to state at some other conferences, I feel the dangers which threaten us involve not only genetic manipulations, recombinant DNA, but cultural manipulations.

Medicine today has done a great deal of good to everyone, improving conditions beyond all expectations. And it has perhaps occasioned excessive hopes as well that everything may be done. We know that not everything can be done.

And possibly the only aspect we might wish for, hoping it might be improved, is that of the physician's contact with the patient, which once existed, perhaps more than today, in view of the enormous increase in population, in demand. I mean that the doctor should once again take on the role he played in the past— being the patient's friend.

I started in medicine many years ago—more than half a century ago—with this intention alone. Medicine then gave me the chance to be close to the suffering. Today, unfortunately, the enormous increase in the number of persons asking for help, the enormous increase in population, makes human relations less warm, though we are technologically much better off.

I regard it as useful for those following me to expand upon these topics, giving us their view of this reality, as I am sure they will.

I feel that if we can manage to make the doctor-patient relationship once again warmer and more human, it will represent a great step forward.

From a technical standpoint, as I previously stated, I am not very afraid of risks, of dehumanization, as regards the possible creation of monsters, for example. And I think it would be helpful for the population to be clearly kept abreast, be truly well informed, to avoid arousing such fears, as recently occurred when there was talk of a hybridization as monstrous as it is absurd: the ape-man.

Fortunately, nature helps us to avoid dangers of this kind, and I do not think, as far as medicine is concerned, that we face the same past and present risks as those associated with nuclear fission.

I am thus led to see the present and the future with a certain optimism and to think that " dehumanization " can be combatted on various levels, first, by avoiding the propagation of absurd news, and secondly, by recreating warmer, more human relationships among health professionals, doctors and nurses, and patients.

In Italy, I may say, I have found that these relationships still exist—though they must be substantially improved—which I as a young person looked forward to maintaining in life and which, however, I have been unable to maintain while completely oriented towards and involved in scientific research.

RITA LEVI MONTALCINI
Nobel Prize Winner in Medicine (Italy), Pontifical Academician

Medicine in the History of Civilization

Diego Gracia Guillén

Introduction

The theme I'm going to develop is the role of Medicine in the history of civilization. It is important to notice from the very beginning that the term " Medicine " can mean several very different things. Medicine can be considered as a science, and in that case the theme to be developed is that of the role of medical science in history. But this meaning of the word medicine is not the primary or the fundamental one. As a matter of fact, medicine existed long before science was invented. In contrast to what we Western men have thought for several centuries, medicine is not primarily a science; indeed, medicine existed a long time before science. That is why today it is generally thought that medicine cannot be formally and primarily defined as " knowledge, " but as " practice "; or perhaps, to be more exact, as " practical knowledge, " but not necessarily as " scientific " practical knowledge, and much less as pure science. Medicine doesn't consist mainly in " theoretical knowledge, " but in " social practice "; that is why the doctor cannot be defined as a " scientist, " but as a " social agent ": the one who is charged by society to care for and cure its members.

As a social agent, the doctor carries out a specific role; one more among the great number of specialized roles that exist in every society: the streetcleaner is a social agent charged with keeping the streets clean; the fireman, with extinguishing fires, the soldier, with defending the nation against invaders; etc. Now, the roles of social agents are very different. There are mainly two types, which sociologists usually call " occupational role " and " professional role. " Medicine can be included in the second type. That is why it may be said that medicine is not primarily a science, but a profession.

This permits me to establish with greater precision the theme of my talk, which I would now entitle: " The Medical Profession in the History of Civilization. " I will develop it in two parts, the first entitled " Medicine as a Profession: the Priestlike Role of the Doctor, " and the second, " Historical Development of the Priestlike Role of the Physician. "

I. Medicine As a Profession: The Priestlike Role of the Doctor

The noun " profession, " present in all Romance languages, has its origin in the Latin word *professio*. This latter proceeds, in turn, from the noun *fassio*, which is very rare in Latin but has continued to exist in its compounds *professio* and *confessio*; on the other hand, the adjective *fassus*, also rare in Latin, has persisted in *confessus* and *professus*. The two are closely related: the verb *profiteor (professus sum)* means " confess out loud or publicly, " " proclaim, " " promise ": and *professio* has, besides the meaning of " profession, " one of " public confession, " " promise, " or " consecration ". Ovid called the prostitutes who had declared themselves as such in the municipal registers *professae (feminae)* (Ov. F. 4,866), and Cicero used *profiteri se medicum, grammaticum* in the sense of confessing publicly (or being publicly recognized) as a physician or grammarian where *profiteri medicinam, grammaticam*, teaching medicine or grammar, had its origin, for which reason *profiteor* acquired the meaning (e.g., Plin. Ep. 2,18,3).

During the Middle Ages, the word *professio* took on more of this sense of social or public consecration, acquiring the meaning of religious consecration. The professions, properly speaking, were the *professio monastica* (entering the regular monastic life by public and solemn commitment to following the vows and the rules, after the year of testing or novitiate),

and the *professio canonica* (the public recognition of the bishops' jurisdiction by priests and lay people). In the last centuries of the Middle Ages, the term was introduced into the Romance languages, where it continues to have the primarily religious meanings of public confession of faith or religious consecration. Even today they are common in our expressions " profession of faith " or " profess in religion, " where the word takes on its solemn meaning.

This strong meaning of the word profession has been devaluated, and has nearly disappeared in the last decades, as a consequence of the broadening of its uses. Today the name " professional " is given to all those who practice a specific technical occupation learnt following the rules imposed by public officials, who, in addition, monopolize the legal capacity to authorize such practice. When we talk about " professional learning, " and about the pilot, the engineer, and so on, we say they are professionals. Even so, it is clear that there is a big difference between these modern professions and the classical ones, the so-called " liberal professions, " such as Medicine or Law, which continue to maintain a unique and higher standard.

Sociology has not been affected by the new language usages, and it makes a clear distinction between " occupations " and " professions. " The machinist and the soldier have occupations, but they are not professionals in the strict sense of the word. In order for a certain technical exercise to be classified as a profession, certain conditions are required which, for Talcott Parsons, are the following: " universalism " (the profession avoids accepting members for reasons such as friendship, family relationships, or any other kind of social link), " functional specificity " (the professional exercises a social function limited to a certain technical or scientific ambit in which he acts with complete authority, but outside this ambit he lacks any recognized competence), " affective neutrality " (he cannot let himself be carried away by positive or adverse feelings towards his clients), and as a conclusion, " orientation towards the collectivity " (we expect professionals to act for altruistic motivations and not for material gain).

Of all of these characteristics — universalism, functional specifity, affective neutrality, and orientation towards the collectivity — the last one seems the strangest. People who carry out an occupation always do so motivated by a special interest, generally an economic one, and this is accepted by society. No one expects a merchant with continuous deficits to keep his shop open indefinitely. But professionals are expected to act in an altruistic way by not converting their occupation into a business. Their social role is so important that it cannot be paid for with money, which is the reason why they do not receive formal " payment " for their work but symbolic remuneration in terms of honor, called " honoraria, " or professional fees. As Parsons writes, " It is expected that merchants will give impulse to their interests by such aggressive means as advertisements. It is not expected that they will sell to their clients without considering if these are going to pay them or not, as is expected, on the contrary, of a doctor with his patients. " Of physicians, as well as priests, altruism is expected, an unselfish orientation towards the collectivity. Medicine's sociological role is very similar to that of the priest.

This idea is very old in Western civilization. Running throughout its history is the metaphor that there are three great orders in the world. These three orders are: the order of the macrocosm, whose lord is God, represented by the priest;

the order of the mesocosm, or republic, whose lord is the king, represented by the judge; and, finally, the order of the microcosm, or human body, whose lord is the physician. And as the microcosm recapitulates in some way the macrocosm and the mesocosm, the physician assumes in a certain fashion the roles of a priest, a judge, and a scientist, which are at once legislative, administrative, and judicial. This power defines the true professions as such. The priest, the king, and the physician in some way unite in their being the three powers, the legislative (defining that which is holy or bad, just or injust, well or ill), the executive (possessing exclusiveness in the use of those techniques which permit passing from one condition to another, from illness to health, from injustice to justice, from sin to holiness), and the judicial (differentiating people in accordance with those criteria). Here lies the origin of the enormous power of these three activities, the only ones which in the strict meaning of the word can be called true " professions. "

The conclusion of this first part can thus be that medicine has always been a *professio* and that the physician as a professional has carried out a sociological role of a " priestlike " type. Let us now see what this role consists of and what its historical development has been.

II. Historical Development of the Priestlike Role of the Physician

Time obliges me to be somewhat sketchy, but even so I think it useful to analyze the role of medicine in six different moments of its history: first of all, in the primitive and archaic world; second, in the ancient or classical period; third, in Europe of the Middle Ages; forth, in modern times, that is to say, between the 16th and 18th centuries; fifth, in the culture of the nineteenth century; and, finally, at the present time. I will try to indicate the most outstanding points of the priestlike role of medicine in each of them.

1) In primitive societies, it is frequent to find a specially qualified member who at the same time exercises the function of tribal chief, priest, witch doctor, and physician. As Bullough has written, in a non-specialized society, this figure appears as the sole specialist. He is not a pure doctor, but it seems this has more advantages then drawbacks. The close relationship between medicine and religion placed him in a privileged position for development. Doctors of old could affirm that their knowledge came from the gods. Consequently, the religious precepts and moral rules helped fix boundaries for medicine; they acted as arbiters for marking out territorial limits and as a protective nucleus aginst all kinds of outside intruders. The exercise of medicine was not comparable in these primitive societies to that of the other more or less professional workers such as carpenters, stone masons, etc. The doctor held a very special status, characterized by the following: first, he had been " selected " from among members of the community, and as such was " segregated " from it and raised to a " privileged " status; second, he enjoyed absolute penal " impunity, " responsible only to the gods and to his conscience; third, he exercised great " authority " over all other members of the collectivity. Priviledge, impunity, and authority are characteristics which clearly describe the sociological reality of the " doctor-priest. " The sociological reality of the ancient doctor was not built up according to models of other artisan activities around him, like carpentry, metalworking, etc, but on the pattern of priesthood. Medicine evolved into a priest-like activity. This was very clear, for instance, in the Assyrian and Babylonian cultures, and also for the people of Israel, where the priest was, at

the same time, lawyer and physician. It is indeed the priest who differentiates what is good from what is not good (and therefore imposes the " legal rule "), and what is pure from what is impure (and specifies, in this way, the " medical rule "). As he is so close to the deity, the priest should be a model of purity and holiness. These two characteristics do not have a purely spiritual nature, but are rooted in the actual biological constitution of the individual. Hence the priest should have certain transmittable biological qualities - hereditary priesthood — and health is considered an inherent quality in priesthood. There was priestly blood before blue blood.

In addition to the doctor-priest, characterized by segregation and privilege, impunity, and authority, there were in primitive societies artisan-doctors. They held a similar status to that of other workers in the community, as they were deemed skilled in the art of knowing curative plants and setting bones, just as the carpenter is in the art of working wood, or the blacksmith in the art of iron. The artisan-doctors were not, therefore, segregated, nor did they enjoy a privileged status, but quite the opposite; neither did they have legal impunity, but were subjected to a very strict law; in short, they lacked power and authority. In primitive societies, disputes between these two medical levels were naturally minimal, since the situation was always resolved in advance in favor of the former. Medicine was essentially priestly.

2) In Greek society of the 8th to the 4th centuries before Christ, when philosophy was founded and well established as rational knowledge of nature, medicine came to be more related to philosophy than to religion. And just as philosophy and ethics tried to educate the spirit of man about truth and good, medicine and gymnastics

ordered his body to make it healthy and beautiful. Medicine thus because a basic pillar of the new Greek pedagogic ideal. The doctor came to be at the peak of the social pyramid, on the same level as philosophers and poets. Certainly the doctor was not a priest, as in earlier cultures, but he was almost a philosopher, and philosophy was the new priesthood of the Greek enlightenment. The so-called deontological writings of the *Corpus Hippocraticum* can be understood only if they are analyzed from the perspective of this new lay priesthood. Let us consider the best known work in the whole *Corpus*, the *Oath*. A careful study of its contents, in search of a norm of morality underlying all its precepts, soon reveals that the theme of the text is of a teleologic nature and this is summed up in the central expression of the work, " for the benefit of the sick, " which is repeated twice: " Whatever houses I may visit, I will come for the benefit of the sick, remaing free of all intentional injustice "; " in purity and holiness I will guard my life and my art. " It seems as if the author of the *Oath* had a mentality quite distant from the interests of the trade, and close to what we could call a " priest's mentality. " To this we must add other prescriptions of typical priestly style, such as secrecy. Thus Edelstein's thesis seems so apposite that the *Oath* was written in a Pythagorian setting where religion and science, medicine and priesthood all combined together. And although this thesis may not be sustainable in all its details, the idea that the *Sitz in Leben* of the text is religious still remains, whether of a physiological or mysteric nature, and that the doctor of the *Oath* represents a new form of the classic " doctor-priest. "

The Hippocratic doctor, *qua* priest, gradually became aware of his status as " chosen, " " segregated, " and " priviledged, " and consequently drew up a special *ethos* centered on defending his " prestige " and " power. " Two types of morality have frequently been distinguished in Hippocratic writings: one altruistic, based on the criterion of the good of the patient, and the other more utilitarian, whose purpose was to affirm professional prestige. They are really two facets of one and the same ethic, as proved by the fact that they coexist in the same writings. The *Oath* ends by extolling prestige. Defense of the prestige of the chosen, of superiors, is a moral question. Goodness not only does not contradict power and prestige (as would be thought much later on), but is its condition of possibility. The Greek ideal of the *kalokagathia* is eminently aristocratic. *Aristos*, the noble, comes from the same roots as *arete*, virtue. For the Greek, goodness of the soul is not possible without nobleness as a biological quality, consisting of a tempered condition of the body. Only the nobleman may be good, that is to say, he who comes of a noble stock, he who enjoys a suitable inheritance and nature.

There is no need to emphasize that not all Greek doctors, not even the majority, managed to reach this privileged status proper to the Hippocratic asclepiads. Alongside these, but at a much lower social level, were the empirical ones referred to so often, in a polemical way, in the actual Hippocratic writings. They are, once again, artisans on a par with the remaining artisans such as carpenters and blacksmiths in the Greek *poleis*. Quite far removed from the aristocratic and priestly ideal, these behave as mere workers. They have no ability to impose any rules, because once again the rules are laid down by the doctor-priests.

3) The advent of Christianity did not introduce substantial novelties into these questions. Although, as has been shown by exegesis, it is true that Jesus' movement had a non-priestlike character, it is also true that very soon, at the end of the first century and through the influence of the prescriptions of the Jewish tradition, the distinction between priests and laity appeared. Throughout the entire Patristic period, it is possible to follow the evolution in the idea of the priest. The Christian priest should respond to the ideal described in the book of *Leviticus*, but at the same time he should assume fundamental aspects of Greek *paideia*. At the end of the 4th Century, Saint Jerome wrote to the presbyter Nepotian, giving him this advice: " It is a part of your (clerical) duty to visit the sick, to be acquainted with people's households, with mothers, and with their children, and to be entrusted with the secrets of the great. Let it, therefore, be your duty to keep your tongue chaste as well as your eyes. Never discuss a woman's look, nor let one house know what is going on in another. Hippocrates, before he will instruct his pupils, makes them take an oath and compels them to swear obedience to him. That oath exacts from them silence, and prescribes for them their language, gait, dress, and manners. How much greater an obligation is laid on us (clergymen)..... " There is no better confirmation of the " priestly " character of the ethics of the Hippocratic *Oath* than the one Saint Jerome offers. Christianity modified but did not alter the fundamental structure of Hippocratic ethics. Furthermore, it is well known that Christianity granted Hippocratic ethics its universality and made it relevant for many centuries. In the Middle Ages, medicine was not in the hands of clergymen and was formally of a priestly nature, but when it passed into the control of famous laymen, it was taken up by them with a perfect awareness of its priestly nature. Caesaro-papism, Constantinism, and political Augustinism established a close correlation between the three types of priesthood: the spiritual one of the Pope, the temporal one of the Emperor, and the corporal one of the Doctor. When an analysis is made of the literature devoted to priestly training, the literary genre called *disciplina clericalis*, it is soon seen how the literary style of *de regimine principum*, whose purpose is to train noblemen, is close at hand. This, on the other hand, is closely correlated with literature devoted to training doctors, the literary genre entitled *de optimo medico*. Like the prince, the doctor assumes a priest's role. Constantine the African or Arnald of Villanova were clear examples of this.

The great mass of empirical doctors and practitioners of inferior rank were evidently far below this. Lacking social and cultural aspirations, they were pure artisans. The ambivalence we have found in earlier times continued to be present, and again the rules were enforced by " doctor-priests. "

4) With the advent of modern times, things seemed to take a new turn. The foundation of medical colleges and other similar organizations made the professionalization of medicine rise in rank. But highly significant peculiarities appeared again. First, doctors conscientiously and systematically kept themselves aloof from the patterns established for constituting and implementing mercantile and artisan occupations. This means they refused to consider their art as a pure commercial relationship or as a mere craftsman's trade. Fully aware of what they were doing, they rejected the status of tradesmen and artisans. If we are to speak of the medical occupation or activity, we may do so on condition that we immediately say that it is a peculiar occupation containing notes of all occupational activities:

namely, that of offering society a product, and offering it in exchange for money. As we can see, the specter of priesthood again appears, enshrouded in new veils. Once more the doctor demands special status due to the priestly rather than mercantile nature of his activity. The peculiarity and loftiness of his ministry require the implementation of tighter protective measures and professional control, that is to say, monopoly. This is clearly revealed when 18th century politicians and liberal philosophers begin their attacks on monopolistic institutions. Doctors counterattack immediately, giving reasons over and over again which they consider invincible. In view of attitudes such as those of Adam Smith, for whom corporate monopoly is unjustifiable, so that anyone could exercise medicine, doctors rose up in arms and with renewed energy denied that medicine was a trade or could be compared with business occupations. The fulfillment of their specific end, to attend the sick, and their professional authority require that they enjoy certain privileges. Medicine cannot be ruled by free trade laws. In a letter addressed to Adam Smith, the eminent doctor, William Edinburgh Cullen affirmed that in medicine, " none of the reasons for unfettered competition are of any force.... The community are scarcely able to judge.... of the merits of medical men..... The life and health of a great portion of mankind are in the hands of ignorant people..... The legislatures should take special care that the necessary art may, as far as possible, be rendered both safe and useful to society. " Monopoly is therefore justified by the classic ideology of priesthood. Even as late as the second half of the 18th century, if a person wanted to speak of an occupation in relation to medicine, he had to add that this was a very special case which oscillated between two poles, that of the classic industrial and mercantile occupations, on the one hand, and that of priestlike professions, on the other.

This is the spirit of the first great code, entitled *Medical Ethics*, by Thomas Percival (1803). The fact that posterity saw its monopolistic ideology, rather than the liberal spirit of Gregory's treatise, as the model to follow clearly shows the course that the medical profession was to take in the 19th century. This is the spirit adopted by the codes of the British Medical Association and the American Medical Association in the middle of the century, that is to say, by the major ideological documents used in defense of professional monopoly. National codes and international declarations published since then have continued to defend the same principles to a greater or lesser extent.

5)In the treatise of medical ethics of the 19th century, the priestly character of the profession can be seen even more clearly. There are authors for whom the doctor is even superior to the priest, since apart from consoling the soul he cures the body. The doctor is the priest of suffering humanity. This idea, which is repeated time and time again in the literature of the era, involves several interesting consequences. These are as follows: 1. *The doctor is seen as the arbiter of the life of mankind*. Like the priest, the doctor holds life and death, man's fate, in his hands. Hence in the doctor's work there is always a certain degree of mystery bordering on divinity. 2. *Impunity of action*. Like the priest, the doctor does not have to respond for his acts at any human court: only God and his conscience are his judges. 3. *Professional secrecy*. The doctor's secret is like that of a priest's in confession. 4. *Economic renumeration*: the doctor cannot be paid a " salary " for what he does, since this system, befitting inferior occupations or jobs, is unworthy and inadequate for him. The doctor receives

" fees " or, like the priest, a " stipend. " Two important consequences derive from this. First, the doctor should not become a state wage earner, as this is detrimental to his freedom and independence. Second, no " tariffs " should be established for medical work, as this goes against professional dignity. The doctor is the only one who in each case may know how much to charge and should not charge less than his colleages, as this would debase the nobleness of the profession and be detrimental to his companions. Finally, the doctor, like the priest, should be exempt from rates and taxes in compensation for his unselfish sacrifice in favor of the community. 5. *Liberal exercise*. This is the common terminus of all the above points. Like the priest, the doctor must, above all, preserve his freedom and independence. His practice must be free. The doctor needs to be his own master: he cannot depend on another, whether this be the state, through its public servants, or any company, through its employees, save in exceptional cases. Otherwise the most exquisite notes he possesses would be endangered, those which make his profession akin to the priesthood.

6)The course of history has resolved most of these discussions in our century, and certainly in quite a different sense from what doctors thought, or at least wanted. Medicine has in fact become socialized: the doctor has become a civil servant and receives an economic compensation in the form of salary. His impunity has disappeared, and today the doctor has to answer for his action at court, just like any other professional. Medical secrecy has also largely vanished. Nothing is left of the old paradigm of the doctor-priest. History seems to have definitively judged against it. The doctor is just one more worker, like an architect, engineer, or any other. The charm has gone.

Nevertheless, looking at it from another angle, the doctor today is more of a priest than ever. Comments are heard at every corner: the role that the priest or confessor played in other times is now represented by the psychoanalyst and psychiatrist. But not only these. Today all doctors practice the work of the priest. They are the new priests of modern welfare society. After imitating the priest, they now take his place. For many centuries the person who imposed the rules and, consequently, who established the criteria of distinguishing right from wrong, normal from abnormal, healthy from sick, was the priest. Later, and especially in Greece and Rome, there was a second instance of imposing standards on civil life different from the religious one, that of the jurist and the judge. If the priest imposed a divine law, when a civil life setting different from the religious one began to emerge, civil law assumed the task of standardizing this and sanctioning behavior as right or wrong, good or bad. The judge assumed priestly functions and to some extent took the place of the priest. But from the 18th century onwards, and especially since the end of the 19th century, medicine has become a more powerful normative practice than the two former classic ones, to the extent that it has managed to take their place, imposing its own rules on them. Medicine has become the top-ranking normative practice. A trivial example will dispel any doubts in this regard. Faced with the case of a man who kills another, the classic priestly rule would render the subject who committed the deed a " sinner "; legal practice would sentence him as a " murderer "; medical judgment may diagnose, and in a large number of cases does diagnose, the matter as physical or mental " illness. " These are three different judgments made from three different normative practices. One has prevailed in each era. But the spectacular thing is not the fact that a practice is used today that is different from the two traditional ones, but that this practice cancels — or at least subordinates and relativizes — the other two so that if the author of the deed is sick, he cannot be judged a murderer or a sinner. Medical judgment triumphs over the others. The doctor becomes the new priest of modern welfare or leisure society. It is not, therefore, surprising that the typical phenomenology of all religions is starting to repeat itself in our society with regard to medicine. I shall not insist on the similarities so-widely commented on: hospitals as the temples of the 20th century, the operating room as a new sanctuary, etc. There are more discreet signs. Any normative system produces a terribly destructive compulsive state, as is widely known, when attempts are made to follow it in an absolute and perfect manner. Religious compulsion, scruples, and their devastating effects on religion itself are well known. Hardly any of this is found today and it echoes of past history. But, significantly, its fall has coincided with the exponential increase in another kind of compulsion, compulsion produced by medical rules, compulsion produced by health. 20th century man has introjected the norms of medicine to such an extreme degree that he compulsively lives his health, with the paradoxical result of pathologically living one's own health, of suffering the sickness of health. It is yet another sign of the religious nature of medicine today and the doctor's role as a priest. The physician no longer imitates the priest: he is the primary priest and for many, the only one.

Conclusions

1. Medicine has always been a profession, in the sociological sense of the word.

2. The doctor's role and status have always imitated the priest's role and status.

3. Doctors coincide in this respect with other groups

that hold power, such as judges and monarchs, who have also assumed the priest's role.

4. Today the most powerful priestly role in our societies is that of the doctor, who is above the roles of the classical priest and judge.

5. This gives medicine an enormous social, political, and human responsibility, and also, based on what we have said, an ethical and religious one.

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Human Presence on the Uncertain Borderline between Life and Death

Corrado Manni

The subject under discussion, even if of extreme importance and gravity and one with which, sooner or later, everyone comes face to face, is highly complex and gives rise to various opinions. In order to confront it objectively and without animosity, we shall put it on a personal level, accepting the advice of Xenophon, who maintained: "If you wish the gods to be your friends, you must placate them. If you wish to be honored by the city, you must serve it. If you wish to be admired by the whole of Greece, then you must force yourself to do well for Greece" (Xenophon, *Memorabilia* II, 1, 28), and we add, if when you are at the end of your life you wish others to show you maximum compassionate understanding, then you must behave in the same way now towards them.

One could, following our reasoning, reply that it is improper to treat a general problem as a personal case, but it would be wrong, if one turns to those who live far from terminal cases and still more so if one turns to those who are responsible for these people's hospitalization. From our experience, the greatest comfort that these patients ask is the maximum understanding of their condition and to receive loving assistance and assurances with regard to their future prospects. Explanations as to the consequences of the turn of events and the theory, backed by solid arguments, that beyond the present exists the absolute are the best ways to help overcome the fears that assail all who come face to face with death. Naturally, these patients ask doctors to help in the fight against the disease, not only to put off the moment of the so-called "settling of accounts," but also to help prolong the pursuit of life in which each one of us is engaged.

This method of behavior, as we have said, does not find agreement with everyone: on the contrary, among those who

discuss the critical phases of life, whether they be relatives or legislators, and among doctors themselves, there frequently exists a profound difference of opinion which sometimes develops into open conflict. This happens because in society there is a well-defined current of thought emerging which is not in accordance with Xenophon, who repeats the Christian commandment " Do not do to others that which you would not have them do to you, " because it is no longer in harmony with the morals of modern society. It favors quality over quantity of life and claims that when the first is compromised or is in the balance, the only assistance that can be recommended is the one which favors the natural course of events. Life, according to them, is a privilege of which one should make moderate use, and for a limited time; when the existence of the patient does not further complicate the problems of society, its defense is allowable, as well as the use of heroic therapy, albeit burdensome, and is justified. When, however, recovery is uncertain or could be followed by serious impairment, the only privilege allowed is that of speeding up the passing over.

This philosophy of life, which considers efficiency of prime importance and which favors the fittest, dates back to Spenser: Darwin then extended it to biology, animal and vegetable. Today one tends to make this philosophy the main support of society. It is, however, disputable from both the human and biological points of view. Darwin, when he placed all living things on the same plane, did not mean to deny that between man and the other species there exists a qualitative passage and continued to believe that he, as a man, was not made to live as a beast, but to " follow righteousness and knowledge. " In accepting this difference, he implicitly understood himself to be privileged. His supporters pass over this distinction, while insisting on equality of the species only because it allows understanding of the correlation between ontogenesis and phylogenesis, and because of this they believe they have discovered the point where science and philosophy meet. However, the division and difference do not lie in phylogenetic continuity among living creatures, which nobody denies, but in the superiority of man and in the recognition of the relative privileges which he has attained, the greatest of which is that of receiving full support at critical moments, even if the end result is uncertain.

The Darwinian theory, which supports the survival of the fittest, understood as the strongest, notwithstanding the consensus it still receives, is not convincing when applied to either peoples or individual species. The history of populations has been a continuous struggle, often with bloody wars, between weak and strong peoples which in the end has resulted in the weak populations' winning. The history of biological organisms has been a continuous evolution from inferior forms of life to superior ones: nevertheless, among the various species which have appeared, the ones which have survived the longest have not been the mastodontic organisms, which, even if the strongest, have instead disappeared, but those which, although weaker, have been able to adapt better. It would therefore be well to take another look at the Spenserian concept and consider as strong not the fittest, but the one which knows how to adapt. It has been these considerations which have motivated us in choosing to help the many who are going towards the infinite, and not to side with the modern tendency which favors euthanasia, also because it is contrary to the general interests, to scientific progress, and, above all, because it is contrary to civil morals.

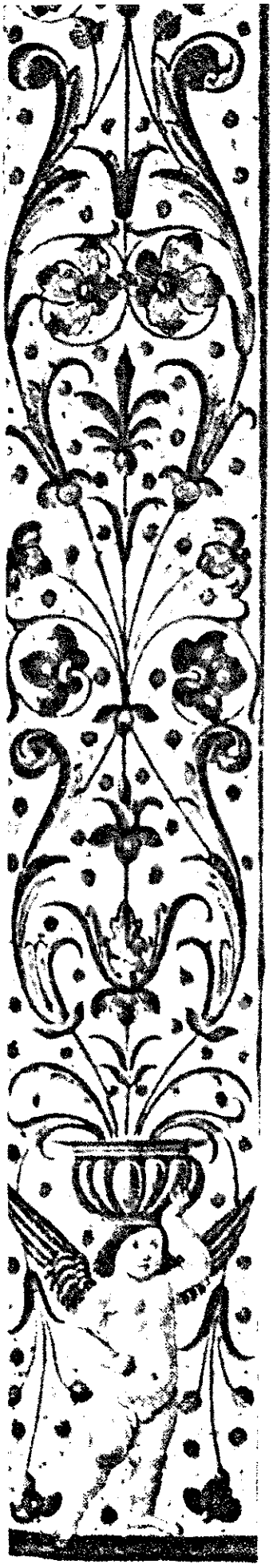
Naturally, the cause for the

weak cannot be sustained only by good and just arguments, but needs authentic facts taken from daily life; during our history we reanimators have searched for these For a long time attention was concentrated on patients suffering from respiratory insufficiency, which in the past was a major cause of death, having recourse to numerous therapeutic expedients, often ineffective. Rhythmic compression of the thorax and, later, mouth-to-mouth respiration, showed themselves to be capable, in particular emergency situations, of restoring clinically dead subjects. The balance-sheet of such treatments, however, would certainly be negative if after, and as a result of, many unfruitful attempts, automatic mechanical respirators had not appeared, which alone permit respiratory assistance over long periods of time.

Cardio-circulatory reanimation followed the same course and found great benefits in external cardiac message, and when opening the thorax became routine surgical practice, in internal massage associated with electric defibrillation. A decisive contribution to cardio-circulatory reanimation came, however, only when, after many unsuccessful attempts, automatic, mechanical assistance appeared which culminated in the heart-lung machine, in the counterpulsator, and more recently, in the artificial heart. The stages marked by these instruments have represented overwhelming efforts, also because the unsuccessful attempts were often contemptuously labelled " therapeutic obstinacies "; today their use no longer makes headlines, nor do the many who take advantage of them know that their survival is the result of many vain attempts made in the past with desperate patients. Today everyone talks with enthusiasm of the progress made in reanimation: few recognize that this followed after heavy defeats.

Equal consideration could be given to cerebral reanimation, the results of which were limited to anoxic insult which did not last more than 4 or 5 minutes. Years of experimental research were needed, by others as well as by ourselves, before arriving at the conclusion that the brain, although phylogenetically the organ which developed last and which for its extraordinary function and complexity appears the most vulnerable, has a capacity for recuperation equal to that of the heart, provided a sufficient and stable flow of blood is assured. Unfortunately, it often happens that the anoxic insult involves both these organs, but their functional reactivation is not synchronous or stable. In fact, after circulatory renewal, the brain also gives signs of resumption; if, however, which often happens, cardiac arrest is protracted for longer than 10 minutes, blood pressure is never stable, so that the brain which receives blood from the heart, has to cope with subsequent insufficient perfusion, from which recovery is difficult.

When it seemed that many serious problems had been resolved, new obstacles appeared caused by metabolic alterations. An incentive to carrying out research on this came from the observation that with each trauma variations in the metabolism of water and salts follow marked by the contraction of urinary excretion, the retention of sodium and chlorine, and a greater elimination of potassium. Since in terminal patients these variations are generally a serious impediment to reanimation because they alter the stability of the internal medium, a whole host of instruments were prepared which allowed rapid diagnosis and numerous suitable solutions were prepared in order to prevent and correct them. Hospital departments now have sophisticated implements and substitutes for organic fluids at their disposal to take care of practically every need. However,



even this path has been beset by difficulty, and correction of saline and basic acid imbalances was arrived at only after a long series of failures.

The correction of humor imbalances has been a conquest of great importance, but not the last because immediately afterwards, in fact, the diseases provoked by the retention of toxic organic metabolytes had to be faced. The first to be identified were the *small molecules,* whose weight does not generally exceed 500 daltons and which are eliminated by the kidneys. The history of hemodialysis is particularly moving and instructive: it arose in a small Dutch hospital thanks to a young doctor who, moved at seeing a young man die of renal insufficiency, dedicated himself to the study of this disease and after many unsuccessful attempts developed the artificial kidney, thereby giving life and hope to large numbers of formerly irrecoverable patients.

Hemodialysis was a great conquest, but it has not resolved the problem of toxic molecules, because there exist others which because of their molecular weight and, above all, because they circulate in organic fluids linked to proteins, are not eliminated by the kidneys. Of these *medium molecules* two groups exist; the first is formed by molecules that have strong chemical links with proteins, and their separation and elimination devolve mainly on the liver; the *second* group is formed by molecules which are loosely linked, called anamolecules, which are very important because they regulate the large majority of organic functions, are extremely toxic, and their links can be severed by means of dilution. We have dedicated a good deal of our research to these anamolecules, studied their chemical and clinical behavior, and also prepared a mechanical method of eliminating them, *hemoanafiltration*, which produces their breaking off and elimination by means of ultrafiltration.

In reviewing our past, we are convinced that in order to make further progress we must look for new ways, be open to new ideas, and remain faithful, in the future as well, to disciplines that have known how to go beyond the old limits of science. This attitude is necessary because the diseases which afflict our patients go beyond the usual daily clinical problems and are rooted in the complex structure of living matter and in the intricate network of intracellular mediators, which for some time have been at the center of researchers' attention. Even if somewhat late, we too are now convinced that scientific research is at a historical crossroads and that many hopes, once considered utopian, can be realized.

Truly, even if this road has not yet been trodden, scientific results of note have already been obtained and, at least on the clinical side, the credit goes to Charles Huggins, who back in the '40's carried out the removal of testicles to produce regression of prostate cancers. He later obtained equal results in women with breast cancer subjected to removal of the ovaries and suprarenal glands. In one woman operated on, after a few weeks a large vegetating tumor of the breast disappeared completely. Enthusiasm for the new therapy did not last long because it was seen that the effect was limited timewise; regression of the tumor is the consequence of a disturbance which takes place in its metabolism, but does not change the fundamental mechanism of the neoplastic transformation. My own commitments and professional choices have not allowed me to follow this important field of research; however, they have not prevented me from keeping up to date on new things taking place in the field of cellular physiopathology and learning, for example, of the discovery of the nerve growth factor made by Montalcini, whose scientific contribution we have always regarded with great admiration. Reading one of her articles which appeared recently in *Science* in which she retraces scientific progress (Levi Montalcini R.: " The Nerve Growth Factor 35 Years Later, " *Science* 1987, 237, 1154) brought us up to date and made us understand both how difficult it is to foresee the unforeseable and how arduous scientific creation is. The nerve growth factor, first found in mouse sarcoma 180 and then in the venom of vipers — this last in the submaxillary salivary gland — and the counterproof obtained by means of immunosympathicectomy were the stages permitting demonstration of their existence, but not practical application. It is not known, indeed, if the factors of the biological response discovered up to now which should act simultaneously on cellular growth and differentiation, without, however, damaging the mechanisms which connect these two important processes, can also carry out a role in the cell which is badly impaired or whether in order to correct the damage to this cell the mechanisms which cannot only be deactivated but completely broken up need to be renewed. More simply, the question we ask ourselves is if, in order to correct damage to the cellular structure, it is sufficient to replace the product of synthesis of the cell, or if it is necessary to replace the damaged parts and prevent its destruction. In seeking an answer to this problem, we look to genetic engineering, expecting new ideas.

Unfortunately, the abstruse language and topics of molecular biology make it a science for the initiated and represent no small difficulty for us. In spite of this, we know that inside the cells there exists a microcosm, the object of intense research on the part of biologists whose progress we have regarded with satisfaction, but with the greatest detachment. We were fur-

ther informed that Fred Griffith, a medical officer with the British Ministry of Health, had demonstrated back in the 30's that it is possible to transform a culture of pneumococci into other virulent bacteria. On another occasion, we felt great admiration for the life-work of Oswald Theodore Avery of the Rockefeller Institute of New York, who confirmed Griffith's studies, defining the role of DNA in cellular transformation. The discovery of the physical structure of DNA, about which in far-off 1953 such a stir was made, seemed to nearly everyone and also to us as certainly an interesting step forward, but irrelevant from the practical point of view. Repeated announcements of Nobel Prizes being assigned to discoverers of enzymes capable of cutting and welding segments of DNA have aroused much curiosity, without our understanding the practical implications. The discovery made by Margherita Vogt and by our own Dulbecco of the transformation in vitro of normal cells into malignant cells by means of viral DNA passed almost unnoticed, even if it represented a re-evaluation of the viral etiology of tumors and a new interpretation of carcinogenesis. The presence of a transforming factor in the tumor cell, the oncogene, and the existence of one of its predecessors in all normal cells, the proto-oncogene, represented a further link in the long chain which should lead to the proper interpretation of carcinogenesis. The isolation of protein synthesized from various oncogenes with the property of catalyzing tyrosine phosphorilation, giving rise to a protein-enzyme found in greater quantity in neoplastic cells, led some to suppose that at last the secret of immortality and its malignant transformation was near at hand. The coincidence of hereditary defects with a different position or with the elimination of arms or bands of chromosomes has led to a search for eventual links

between the fundamental structure of cells and the majority of pathological currents, including even senescence. Technological development has finally given such an impetus to the subject as to force it on the attention of all scientific circles and the political and economic forces of the major countries of the world. In the United States there is a heated debate going on, with which the political forces of many other countries have associated themselves, about the financing to be assigned to the techniques which should lead to the definitive knowledge of the structure of the genome in its entirety and allow the solution of many problems in pathology. The so-called *black box* which is supposed to contain the secrets of life is thought to be about to open and we are all waiting now to know what direction medical disciplines are going to take.

Faced with limitless prospects, can we as persons and as representatives of a branch of medicine particularly aimed at further development remain extraneous and ignore that in that black box something of importance might exist for us as well? Obviously, our duty lies not in waiting for others to resolve our problems, but in at least trying to pre-determine what our requirements are. The most important, also because it is the biggest cause of death in terminal patients, consists in diminished resistence to stress caused by *reduction of energy reserves*. The proof of this is found in the fact that after the age of 20 cardiac performance is gradually reduced and consequently the perfusion of all the organs diminishes; the speed of transmission of the nervous impulse slows down; basal metabolism per unit of body surface is lowered (Shock, W.S. *Current Concepts of the Ageing Process.* J.A.M.A. 1961, 175, 654). If energy reserves did not undergo variations and instead remained stationary at the age of 10, the average survival age would pass from 70 to 700 years, and many of the problems of reanimation would automatically be resolved. (Confort A.: *The Biology of Ageing,* Lancet 1956, ii, 772). Obviously, the objective of raising the average age to 700 years is pure fantasy, but it is not fantasy to ask if potential, hypothetical mechanisms exist for augmenting energy reserves from the moment it is known that special little organs, *mitochondria,* exist whose liquid matter is the site of oxydative phosphorilization, which is the primary source of cellular energy. Once it is established that to advance in the field of reanimation it is necessary to increase energy reserves, our object becomes that of knowing the general lines of molecular biology to follow, then to understand the structure and function of the various endocellular formations and the connection that exists among them.

In trying to find a summary conception in molecular biology, which for a long time has faced this problem, we came across a *theoretical model* that is among the most widely accepted today, which considers the cell as a circle on whose surface between 30,000 to 300,000 genes are distributed; only a few of these are active. In every active gene the code for a specific protein exists, and together the proteins form a thick network which determines the form and function of the cell. Among the genes one permits unlimited reproduction, another promotes cellular malignity; the energy source, however, is concentrated in an apparatus constituted by the mitochondria.

The biggest *advantage* of this theoretical model is its simplicity, but it seems to us that it also has the *disadvantage* of attributing immortality and malignant transformation, which are extremely complex phenomena, to one or more genes, or, which is the same thing, to one or more proteins. Today this interpretation finds less and less consensus, inasmuch as it is recognized that oncogenes react in the same way as many well-known carcinogenes. It follows that the image of the circle upheld by a thick network of regulators of biological response should also be corrected, replacing some genes with mechanisms which sustain endless reproduction and the production of cellular energy. These mechanisms were formed over billions of years during which matter entered into a series of combinations resulting in a set of phases of development. The first of these was limitless reproduction, and the other, the " coin of universal energy exchange of the cells " (Grivelli, L.A.: " Il DNA mitocondriale, " *Le Scienze* 1983, 30, 102). At the basis of both lies the *nucleotide,* a chemical complex consisting of a purine or pyrimidine base combined with a glucose and phosphoric acid; the linear aggregation of many nucleotides then gives rise to RNA, which is the first molecule endowed with autoreplication. RNA, endowed with the capacity for complementarily combining, has allowed the formation of DNA, which itself has all the elementary proprieties necessary for the cell to reproduce endlessly and to keep its structure and its specific functions for successive generations. DNA is too well known to require description; less consideration is given to the fact thet its capacity to reproduce itself forever depends on the two filaments of which it is constructed being held together by weak ties and by their complementarity; it depends, too, on the conformation and the order in which the genes are disposed along its filaments; on the capacity to describe and transport the genetic information utilizing diversified RNA; on the presence of ribosomes where the formation of proteins takes place, which then determine the cellular morphology and function.

Two of these structures exist for each cell; one, situated in the nucleus, is the nuclear genome. Each genome is supplied with a double apparatus: physical, in which the mechanism of infinite reproduction is situated, common to both; the other, chemical. This nuclear genome produces protein; the cytoplasmic or mitochondrial genome takes care of the synthesis of complex enzymatic respirators and, therefore, of the production of energy. There is close dependence between nuclear and microsomial DNA; in fact, it is the *nuclear DNA* which supplies the monochondrial DNA with the greater part of its structural material, codifies for all the enzymes necessary for the repetition of mitochondrial DNA and for its translation into RNA, and also codifies for the proteins which combine with RNA; these form the mitochondrial ribosomes and constitute other factors essential to the synthesis of mitochondrial proteins. The mitochondria, although provided with their own genetic material, are not self-sufficient because the greater part of the proteins which compose them are codified in the nucleus, and if the genetic mitochondrial system is retained, it is thanks only to considerable work on the part of the nucleus and the cellular mechanism for the synthesis of proteins (Grivelli, L.A.: " Il DNA mitocondriale. " *Le Scienze* 1983, 30, 102). As with the nuclear and the cytoplasmic genome (indeed, the mitochondrial DNA represents the " detached outpost "), there exists an equal interdependence between the nuclear and cytoplamisc genomes, and the variations that involve one have repercussions on the other: of the two, the physical apparatus, which permits perpetual reproduction of the cell, is more stable; the chemical apparatuses, receives external stimuli and exposes the cell to all the negative influences. Between the physical and chemical apparatus, joined to each other at the ribosome level, there apparently exists a certain equilibrium; the mixing which the chromosomes undergo again in the substance during cell division causes a breaking off consisting of displacement or destruction of one or more arms or of a segment of the chromosomes, with consequent displacement or destruction of the differentiation-active genes. When the mitochondrial apparatus or the differentiation-active genes are damaged, a progressive depletion of energy reserves takes place with deterioration and ageing of the cells; if the damage consists of the deactivation or elimination of the differentiation-active genes, the cell will regain its primary property, that of infinite reproduction, and will become immortal. The drop in energy reserves, or ageing, which amounts to the same thing, and cancer would be two sides of the same coin and could receive the same treatment, although by different methods.

Genetic engineering by means of DNA re-arrangement has shown itself capable of manipulating to the extent of realizing unlimited cellular reproduction and, as a consequence, of avoiding senescence; this result was obtained in vitro by experiments carried out on some animals. Human somatic genetic therapy is only in its infancy and it is, therefore, premature to predict its future. Even if it is impossible to predict the unforeseen, many examples exist, including the history of the *nerve growth factor,* which teach that it is possible to overcome major difficulties provided we know how to progress step by step, adopting a " reduced attack " (making haste slowly) method, and " after a long sequence of unforeseen events the various problems can be resolved and the range of knowledge changes. " We are living at a particularly favorable moment in history in which it is difficult to draw lines between fantasy and reality, and at a time when the most wonderful art is to challenge the infinite.

It is time to conclude, and I must ask you to excuse me if I have allowed myself to be drawn into the field of theory and digressed from the immediate task of demonstrating the human presence to those who are at the dividing line between life and death, thereby trying your patience and taking up your time. I would ask you, however, to try to understand the efforts necessary to go into a field that is not my usual one. However, I am sure that the exceptional person chairing today's session will understand and, if necessary, correct what I have expounded and will, in any case, give tremendous impetus to the continuance of our difficult progress. I must confess that in preparing my speech I was undecided whether to keep it along classical lines, repeating well-known facts intended to be consolatory, or whether to look at the problem in perspective, risking language obscure even to me and becoming utopian. As you will have realized, I chose the second way, which, although seemingly abstruse, is — at least today — the only alternative way of looking in perspective at the solution to the problem which afflicts patients in reanimation and actively touching upon the progress of science.

Putting genes back in their rightful place, or the renewal of differentiation-active genes, is the most extraordinary challenge to nature today, because it involves a radical change in methods of therapy, opens up marvellous prospects for humanity, improves the moral conduct of society and is in line with " the will of God, whose greatest glory is living man. "

Is it presumption if we, too, wish to participate in this great challenge?

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The Ethics of Experimentation upon Human Subjects

Kevin O' Rourke

Introduction:

Since the Second World War there have been several statements issued in regard to the ethics of experimentation upon human subjects. One set of statements has been issued by the Catholic Church.[1-12] Another set has been issued by national and international study groups.[13-25] The statements of the Church are usually directed to the topic of " Experimentation on Human Subjects, " while those emanating from study groups state their topic as " Research involving Human Subjects.. " A recent document of the Catholic Church makes a distinction between research and experimentation,[3] research being any inductive-deductive process which aims at observing a phenomenon or verifying a hypothesis , while experimentation is research upon or with human beings. However, as yet this distinction is not commonly accepted; hence, in this paper, experimentation and research will be considered as synonymous terms. Research or experimentation involving human subjects may be described as seeking generalizable knowledge concerning human function or behavior through empirical studies.[3 16]

In order to attest that there have been serious problems resulting from research programs involving human subjects there is no need to discuss explicitly the aberrations and injuries resulting from experiments upon human beings which have occurred in our lifetime.. The very number of statements that have been issued in the past forty years by both representatives of the Catholic Church and the various study groups indicate that serious problems surround this research. Rather than dwell on the problems, then, my intention in this presentation is to consider the areas of agreement in regard to research upon human subjects contained in the documents issued by the Catholic Church and those emanating from the various study groups, to consider the areas of disagreement, and finally to consider the ethical foundations for both sets of statements. In formulating the ethical foundations for these statements, I hope to provide insights which will enable those following the teachings of the Church and those following the documents from the study groups to reach better understanding of the important ethical issues arising from research involving human subjects..

I.. Areas of Agreement

The statements of the Catholic Church and the documents issued by the study groups set forth many similar ethical norms for research involving human subjects. Briefly, I shall state these norms; appropriate citations are contained in the footnotes.

1. Research on human subjects, because it yields knowledge which is beneficial for individuals and society is a vital part of scientific medicine and should be fostered and promoted in our society.[1 5 11 18]

2. Ethical research requires informed consent on the part of the subject. If the subject is incompetent, then a guardian or proxy offers informed consent. Informed consent requires knowledge, understanding, and freedom on the part of the participating subject.[9 16 T]he statements of both Church and study groups approve double blind studies and the use of control groups, provided the human subjects are notified beforehand that one segment of the group will not receive the substance or procedure under study..[9 18] The study groups have insisted more strongly on the formation of review boards to protect subjects involved in human research from unwarranted harm and risk and to ensure that the consent of the human subject is truly informed..[19 22] The Church documents are more inclined to leave this responsibility in the

hands of the researcher; no specific mandates for review committees are given.[5]

3. Research upon human subjects is therapeutic or nontherapeutic.[5,18,16] Therapeutic research aims at bettering the medical condition of the human subject. Therapeutic research studies either standard or innovative therapy.[7,16] Standard therapy studies a therapeutic practice which has been accepted as safe and helpful; for example, research involving the use of beta blockers. Innovative therapy studies practices which are therapeutic but not yet accepted as standard therapy; for example, the initial research upon the left ventricular assist device. Hence, if a therapeutic procedure is included in a research program, it is evaluated under two different formalities. Under one formality it is evaluated insofar as it contributes to the physiological or psychological wellbeing of the patient. Under the other formality, it is evaluated insofar as it yields generalizable knowledge.

4. The risk or harm involved in research must be proportionate to the potential benefit.[3,9,18]

In the statements of the Catholic Church, the ethical norm in regard to risk and benefit is an application of the principle of double effect. Thus, the action itself, from which the harm indirectly results, must have a good effect which is primary and direct.[2,12] In the documents issued by the study groups, a quantitative judgment evaluating risk and benefit is implied. This system of judging inclines toward an assessment of results alone, rather than toward an assessment of the act from which the effects result as well as the effects of the action.[15,17] Hence, the phrase often used by people judging quantitatively: " The action is ethical because more good than harm results from it. " If the research is therapeutic, one may consent for oneself to participate in the research program even though there is some harm or risk of harm foreseen. If the research is nontherapeutic, one may put oneself at risk for other people. The risk or harm, however, should be proportionate to the good to be obtained for others.[3,9,18]

Insofar as subjecting another person to harm or risk is concerned, the case is somewhat different.[3,16] If the research is therapeutic, then the proxy may subject the incompetent subject to risk or harm as long as there is hope of proportionate benefit to the subject. But because proxy consent is designed to protect the wellbeing and humanity of the incompetent subject (not to interpret what the incompetent person " should wish to do "), in nontherapeutic research the proxy may expose his or her ward only to " minimal " danger or harm. Minimal harm or risk is the harm or risk associated with routine medical testing.[17]

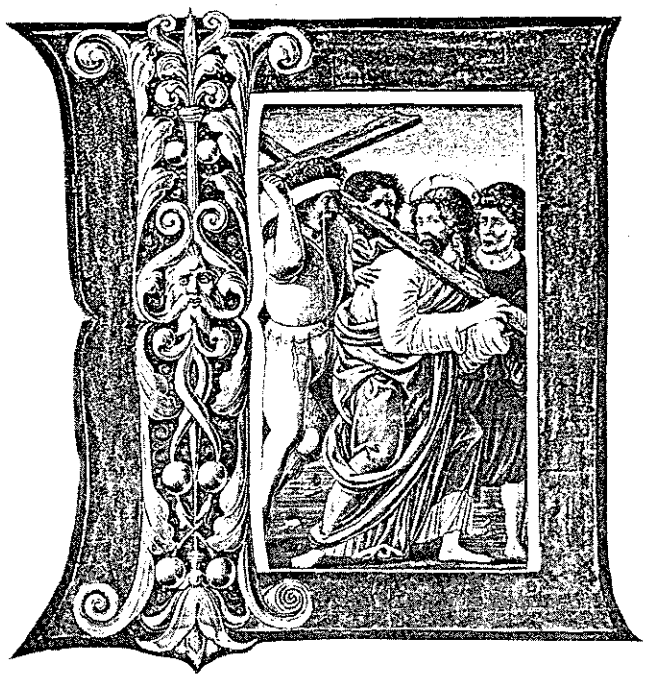
5. Research upon human beings should be allowed only if it is preceded by appropriate research upon animals.[6,14] Though animals are to be treated humanely and should not be exposed to pain or death unnecessarily, research upon animals is an ethical practice.[4,27]

6. Equity should be observed in selecting subjects for research and in selecting scientific problems to be studied. Hence, those who are weaker members of society must be protected; the retarded and prisoners, for example, should not be exploited, especially if they will not benefit from the research.[8,16] Moreover, the scientific problems to be studied must not be selected only because their solution will enrich the sponsors of the research.[4,19]

7. Finally, the human subject should be free to withdraw from the research program at any time; this right of withdrawal may be exercised by a proxy for an incompetent subject as well.[12,22]

When we predicate agreement in regard to some of the aforementioned ethical norms, it should be realized that cer-

tain assumptions underlying the statements of the Church and the study groups may lead to different practical applications of these principles. For example, when both Church and study groups require informed consent because the " dignity of the person " requires it, the Church bases human dignity upon the belief that man and woman are made in the image and likeness of God, while the study documents base human dignity upon the principle of autonomy. [5 19] Moreover, the Church presupposes that the goal of human existence is eternal life, while the study groups do not work from this belief. Finally, while proxy consent is required by both groups, the purpose of proxy consent may differ. The Church statements assume that the proxy will help the incompetent patient toward eternal life; the study groups wish to protect whatever degree of autonomy may be present even though the person is incompetent.



II. Areas of Disagreement

If there has been some agreement in the past in regard to experimentation involving human subjects, there is disagreement found in contemporary statements on research programs. The Catholic Church, for example, states unmitigated opposition to non-therapeutic research upon embryos. Pope John Paul II stated recently: " I condemn in an explicit and most formal way experimental manipulation of the human embryo. " [6] The Church also expresses serious reservations about research involving genetic elements which result in changes in the human body or mind. " It is really of great interest to know whether an intervention upon the genetic store exceeding the bounds of the therapeutic in the strict sense is morally acceptable, " states Pope John Paul II. [5] He then lists some conditions which such research would have to fulfill in order to be ethical, the most important condition being respect for the body-soul unity of the human person. He concludes: " Such an intervention must consequently respect the fundamental dignity of mankind and the common biological nature which lies at the basis of liberty; respect consisting in the avoidance of manipulations tending to modify the genetic store and to create groups of different people, at the risk of provoking marginalizations in society. " [5]

The study groups, on the other hand, realize that genetic experimentation, whether therapeutic or non-therapeutic, is dangerous because the results of such procedures are impossible to predict. But though caution is exressed, there is a willingness to undertake such experiments and see what happens. [15 18]

In regard to non-therapeutic research upon human embryos, we find the study groups divided. While the Australian Study Group rejected such research, [14] the study groups in the United States, [17] the United Kingdom, [15] and the Report on the International Summit Conference on Bioethics approved of such research in principle, [13] even though the human subjects might die as a result of the research. For example, the International Summit Conference maintains " that there is a need *to keep in balance* the professional liberty for clinical treatment and for scientific inquiry in the interest of progress in medical knowledge and skill while upholding regard for the human interest of the embryo. " [13] (emphasis added) The aforementioned study groups state that embryo research is acceptable if first it be approved by a review committee. Clearly, the review committees recommended in contemporary studies such as the Warnock Report are not concerned primarily with protecting the rights of the human subject (cf. §2 above) because those rights are to be balanced, not protected. Rather the review committee, representing a cross section of the public, as well as scientific interests, seems to have the responsibility of reflecting public opinion. [13 14 15] This opposition surfaces primarily in regard to the use of " spare embryos " resulting from I.V.F., third party donors of ova or sperm for I.V.F., and circumventing the act of intercourse in generation.

III. Ethical Grounding

Given the agreement in regard to some ethical norms, why the growing disagreement in regard to " new agenda " in human researchg? A complete analysis of the differences underlying the two statements would require a resumé of the history of philosophy and some accounting of the differences between faith and reason. However, let us state as briefly as possible the reasons underlying the differing conclusions. In its traditional theology and philosophy the Church maintains that there are human actions good or evil in themselves, the good or evil being determined by objective evidence.[3 5] This objective evidence is derived from studying the nature and purpose of the person; the needs, functions, and bodily integrity of the human person must be considered. (The relationships among the functions of the human person are explained by the principle of totality, an important element in medical ethics proposed by the Church).[8 9] Thus, not only the extrinsic effects of the human act should be considered when evaluating moral action, but also the intrinsic effects. The intrinsic effects of a moral action involve the impact of the action upon the person who performs it or upon whom the action is performed. These effects must be taken into account as well as the effects which " may cause more good than evil. " If the action is evil insofar as the natural needs and functions of a person are concerned (their intrinsic effects), it is not ethically good simply because it results in a good effect for someone else. In the Catholic tradition, ethical norms are derived from this method of analyzing human acts. Some of the ethical norms of the Church do not admit of exception because the human acts which they prohibit are evil for everyone, e.g., " Do not kill innocent human beings. "[6 9] Hence some ethical norms are to be observed by all persons at all times and should not be violated to achieve a greater good. In sum, the ethical norms of the Church are founded upon objective evalutions of human persons, their needs, functions, and actions, not only upon the " effects " of these actions. Sometimes these norms are exceptionless

The study groups, on the other hand, seem to have changed their grounding for ethical statements. In the statements issued immediately after the Second World War, the foundation for ethical norms for research involving human subjects was, in one form or another, Kantian Autonomy. With this basis for determining ethical norms, there were several exceptionless norms stated.[16 23 24] However, recent statements from the study groups follow a utilitarian grounding.[13 15 18] According to this ethical approach, which is common in our society, there are no actions good or evil in themselves, no exceptionless norms, and an action is good as long as the person performing the action believes " it results in more good than harm. "[30] Thus, the question asked in many contemporary studies is whether the research results in more harm than good. The nature of the action insofar as the human subject's needs are concerned is not considered to be the dominating factor. The chairperson of the Study Committee on Embryo Research for the United Kingdom (Warnock Report), when defending non-therapeutic research upon human embryos, stated, for example: " The argument in effect amounted to this: in a calculation of harms and benefits, the very early embryo need not be counted. "[28] Incidentally, the Australian Commission, in rejecting non-therapeutic research upon human embryos, stated that there is no scientific evidence to allow a distinction between a " very early embryo " and an " embryo. "[14]

Conclusion

If the present trends continue, there seems to be potential for a growing disparity between the teaching of the Catholic Church and the ethical conclusions approved by national and international study groups. Moreover, the clinical practice of some researchers and physicians will be more and more at variance with traditional ethical theory. An example of this clinical variance is found in the willingness of some surgeons to transplant the vital organs of anencephalic infants, thus directly causing their death in order to allow others to benefit from their organs.[29]

The stakes are too great to allow the present disparity of ethical norms to grow wider.[4] If we are to reach some agreement in the future between the statements of the Church and the study groups, I suggest we must investigate two specific questions: 1) Given the history of experimentation with human beings, does a utilitarian ethical approach offer sufficient protection to human beings who are potential subjects in research programs? 2) Could the desired scientific knowledge sought through non-therapeutic research be developed without sacrificing human life in the process?

Fr KEVIN O'ROURKE, O.P.
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NOTES

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Priority of the Dignity of Human Life in Problems of Health

Joseph Joblin

All men feel bound by values; life involves them Everyone knows by instinct that the safeguarding of life should guide his practical behavior; there is a threshold of reflection beyond which all life becomes a mystery, where respect for and promotion of life are imposed on us as a value.

These three days of debate have helped reinforce this conviction, and if there was need for it to be still further confirmed, the round-table discussion that has just taken place has done that. All civilizations are in agreement that man is not master of life; it will continue to progress even when individuals in which it is made manifest today will have disappeared. Life, the precise knowledge of which escapes us, has mastery over the living being, and religions propose an explanation for this, telling us that it is " sacred "; they conclude that the primacy of human dignity must be the fundamental conviction that guides man's actions, including his professional activities.

The aim of this paper is to reflect on this statement so as to show in what way and under what conditions the dignity of human life, defined as a value not just to be defended but to be developed, must be held to be the fundamental norm for the behavior of Catholic doctors and their assistants in questions of health.

To this end, we shall speak of: 1) the moral and religious challenge posed to Catholic doctors; 2) the meaning that should be given to the expression " primacy of the dignity of human life "; 3) some practical conclusions that can be drawn from this.

Indictment of the dignity of life

All ages have been fac ed with the problems arising from the duty of respecting life. One of the merits of Christianity has been to impose on the European conscience, by appealing to its religious dimension, the conviction that all violence is an evil, that the weak deserve help and protection more than anybody else, and that life cannot be arbitrarily suppressed. Of course, the history of the Christian West has been marred by attacks on this conviction, but these were considered failures and shortcomings in what should have been; as Cardinal Newman (1801-1890) wrote: " Man being who he is, it would be a miracle if scandals of this sort had been absent from the history of the Church. " [1]

The contemporary challenge

We must not be astonished: every age in history is a challenge to the Faith; the challenge of the present age consists in the fact that an inversion of values has been produced in man's conscience; with regard to life, that which in other times was judged to be moral can be found to be considered a deviation or countervalue today. There have always been abortions, contrived deaths, recourse to inhuman practices and torture, contempt for man pushed to the point of his becoming an instrument of passions; what is new now, in our age, in the justification put forward in the name of the defense of the rights of man. Euphemisms cover practices of which we disproved yesterday and present them as the achievement of the basic right of man to expand in liberty. We speak of " wanted motherhood, " " death with dignithy, " " national security, " " freedom of scientific research "; under the cover of these " ideals " there is a new philosophy of man, an individualism pushed to the extreme, which the media propagate, placing those who want them to reflect Catholic thought with precision in the dilemma either of cutting themselves off from the world so as not to appear to expose themselves to propaganda against life or so as not to enter into its views, or of taking up the challenge by opening

hearts and minds to the real exigencies of life so as to bring to birth what Paul VI termed " a civilization of love. " [2] " Life, " he wrote," is the summit of peace. " " If, " he added, " the logic of our actions, of our behavior, begins with the sacredness of life, then certain actions will not be permissible. " [3] The Christian's conscience is today torn between two loyalties, one of which asks him to be present in the world to evangelized it and to participate in its professional, cultural, economic, social, and political life, even though forces hostile to the Gospel are trying to dominate it; the other requires him to safeguard the purity of the Gospel message and to make its supernatural character stand out. A debate which, at the very beginning of Christianity, the author of the letter to Diognetus seems to have known about when he described the figure of the Christian as one " cut off from his true homeland " and " bearing the burdens of social life as a separation, " wandering through the Greek and barbarian cities and " conforming to the customs of society as regards the manner of dress, eating, and behavior. " A debate that, three centuries later, St. Augustine was to speak about; showing up the falseness of those who say: " I will distance myself from the world with a few righteous people, " he replies, " Not to be of any use to anyone is an act of godlessness, a cruelty; it is not what my Master teaches me. He condemned the servant, not for having misused the money he had received, but for not having put it to good value. " [4]

Conscience, then, finds itself having to choose between two series of opposed requirements: on the one hand, the need to meet with other people in order to help them discover the Truth for which they were made, " to know and understand this world in which we live, its expectations, its hopes, its often dramatic character " [5]; on the other, the need to oppose them, for, considering itself unable to accept their criteria of choice, their basic values and points of interest, their lines of thought, their sources of inspiration and models for human life, conscience considers she has no choice but to " overthrow them by the strength of the Gospel... , for they are opposed to the Word of God and the plan of salvation. " [5]

This is the challenge launched at Christian members of the medical professions, for sickness and health are the terrain on which too many helpless people are breaking their traditional ethical attachments and accepting that reversal of value which a reasonable understanding of the true needs of man in the modern world appears to demand.

The priority of life as an ethical norm

The Christian doctor finds himself confronted in the exercise of his profession by the practical materialism of present-day society; this is characterized by the fact that the traditional modes of thought which viewed sickness in a religious context, that is, centered around God and his design for the world, have been replaced by a purely rational system of analysis centered on man. Whereas in other times medical treatments drew human signification from both the mercy of which they were the expression and the capacity they gave to the sick person to exercise his conscience in freedom, we find ourselves today faced with a depersonalization of health and life " When all is said and done, " writes Jean Rostand', " he [man] seems like a tremendously complicated edifice made up of electrons, which owe to the particular way they are grouped together the singular privilege of being able to affirm their own existence. As regards thought, the chief pride of man, these masterpieces of biological architecture consist of the cells of the cerebral cortex. ...It is there that the highest manifestations of the spirit take place. ...Man is nothing less than the work of a lucid will. ...His birth was not part of any cosmic program. ...He came to birth without reason or end, as all beings come to birth; it does not matter how, it does not matter when or where. Nature is without preference and man, in spite of his genius, has no higher value for her than any other of the millions of species of terrestrial life...

" Can it at least be allowed to ephemeral man, swallowed up in this cosmos without bounds, to consider himself the depository of a privileged value which defies the norms of time and space? It is hard to see whence he could derive such a worth. " [6]

Thus the crisis of the health professions has a global meaning: in the face of medical progress — the employment of technology that increasingly bends nature to the will of man

— members of health care staffs cannot elude the question of knowing what meaning to give to their work: with such an operation or therapy, such a health care policy, such a way of treating the patient. The questions of professional morality posed to practitioners reflect the questions of contemporary generations about the meaning of life and existence; the solution applied to concrete situations in modern life will depend on them. It is in accordance with the view one has of life that one will decide, starting from the idea that one cannot any longer sacrifice one's personal preferences to the consensus established in the profession about certain therapeutic practices. To the practical doubt that worms its way into consciences the Catholic doctor has the vocation to reply; it is up to him to build around him a consensus based on a concept of existence within which modern man can give God his place; it is up to him to show, because he is a believer, how he resolves this " flagrant contradiction which weighs on 20th-century man as a sort of wound to his pride ": on the one hand, the confidence he derives from his power over nature to be able to create a world where sickness will be banished and health assured for everyone; on the other, " the bitter reality " [7] that the extraordinary successes encountered in the fields of surgery and preventive medicine are counterbalanced, even annihilated, by the destruction of man carried out in the name of medical progress.

It can be seen in the quotation from Rostand; at the center of modern uncertainties, Life is to be found; his study is a rallying point for all who reflect on their present state of existence. It is, therefore, around this concept that the psychological unity of the human race must be rebuilt, as the Council and the last few Popes have invited us, in order to construct this universal civilization. In a recent address to the Pontifical Academy of Sciences, Pope John Paul II spoke of the necessity, the moral obligation, of setting up " laboratories of life " [8] so as to be able, in certain historical circumstances, to choose what allows us to cooperate for the good of mankind and the building of peace. How can a doctor not take part in this enterprise, he whose profession it is to witness to the dignity of man by treating him as what he is, a person, that is, an inviolable being, equal to others, a free and responsible being? And, after giving this definition, Paul VI added, " Let us state it simply: a sacred being... " [9] The Catholic doctor thus does well to have an ethical attitude, for it is required of him that he make the dignity of man and the value of life the first imperative in the solution of problems of health.

Priority of the dignity of man

There are two opposing schools of thought in the West; for some, including Rostand, life is a " mass of phenomena (growth, metabolism, reproduction) presented by all animal and vegetable beings from birth to death " (Petit Robert) and nothing more. A definition which does not want to imply philosophical or moral reference. What the eye of the observer notices is the question as to how " a mass of functions that resist death " (Bichat) constitutes life. How is it constituted? What is the principle that maintains its cohesion? So many questions which the so-called scientific observer cannot answer, and the replies are left to literature, philosophy, or religion.

While this mentality continues to influence people's ways of thinking today, as witnessed by Jacob's book of about a dozen years ago, *La Logique du Vivant*, and while it still sometimes finds a fertile seedbed in the mentalities that are presently influencing Western civilization, there is another view of life that is not restricted to the merely biological aspects. According to this, a finality moves the living being; this finality constitutes the basic ethical norm upon which his activities are to be constructed; this, therefore, concerns the doctor insofar as the doctor is a servant of life. Man is thus seen as a complex being, a marvel whose activities of a higher order are made possible through the agency of those of the lower order; man is considered to be endowed with abilities at different levels which condition each other; he is considered as a whole whose value is defined by the superior capacities proper to him. Of course, this vision conflicts with the scientific view of life diffused throughout our society; some find it difficult to rise to a recognition of this reality and to an inclusion of this dimension in their analyses. How precise does what George Bernanos wrote about this disagreement sound to our ears, as he analyzed this contradiction which misleads modern man; he sees him tempted not to accept as real what he cannot touch and to reject the existence of the world of the spirit. In order to illustrate the reality of this spiritual world, Bernanos analyzes the phenomenon of prayer; flailing those who make of prayer an " absurd idea, " in his words, as if it were nothing other than " a kind prattling, the dialogue of a madman with his shadow, or worse still, a vain and superstitious pleading in order to obtain the goods of this world "; as if it were not, on the contrary, the success obtained by this higher way of the spirit which has known how to channel the ordinary energies of this life to its advantage. " Oh! Doubtless the knowing will speak of suggestion... But then, by what miracle do these half-mad prisoners of a dream, these wide-awake dreamers, appear to be able to enter more readily day by day into an understanding of the miseries of

others? A strange dream, a most singular opium which, far from turning the individual back on himself, isolating him from his peers, makes him one with all others in the spirit of universal charity. Alas! It will be believed through the words of psychiatrists, and the unanimous opinion of the saints will be held in little or no account. They do well to remember that this sort of interior deepening does not resemble any other, that instead of disclosing to us gradually our own complexity it bursts forth in a sudden and complete illumination; it emerges into peace. Otherwise one will be content just to shrug one's shoulders. " [10] I thought it fitting quote this text, for the witness that doctors and health care workers give to life is analogous to that of the Carthusian on the reality of the spiritual world; the attitude the Catholic doctor takes towards life in his professional activity should be the reflection of an interior conviction which must be cultivated in him of the vocation of every person to be the artificer of his own destiny, in the truth, concretely. In this spiritual, Christian perspective, life is not just a bunch of biological functions. This makes it possible for a being to have an independent existence, to put into motion his own dynamism, to mobilize all his resources and make them serve the same end. Man is so structured that every time he wants to act in a conscious, responsible, human way he must place all his faculties at the service of the end he has chosen. The anthropology that the Christian derives from his faith leads him to place the religious life at the peak of his needs; the ethic which he develops in the exercise of his profession and also throughout this present life is an essential form of this; the putting into practice of the judgement of his conscience gives meaning to all the other forms of life in which he participates. For the Christian, every man is called to the knowledge of God, a knowledge that enlivens his natural existence and makes it a free reply to the transformation of conscience for and in God. All aspects of terrestial existence, health among others, are like stages through which one is called to pursue a dialogue with God; it aspires to psychological transformation, to making natural what seems incomprehensible to those who have not attained this degree of spiritual development. The biological life of man thus derives a special dignity from the fact that it is ordered towards the development of the religious life and conditioned by its realization. One cannot separate the various levels of human activity as if man consisted of the sum of them; one cannot claim that the actions of the spirit are nothing but the product of the activity of cells without risking " deranging " this one complex whole that is man [11]; he would be split into different elements, each one capable of pursuing its own end; man would no longer be the " active unity " (Perroux) in which "human and moral are two terms which both say the same thing. " [12]

The uncertainty that characterizes man today — is not this the result of wanting to trust reason alone to give a meaning to existence? This has caused the " disintegration of religious thought, " whose function is precisely that of giving this meaning; from this " stems the confusion about conscience and human activity. " [13]

Through the upheavals in the knowledge man has of his own condition, " God is the axis of human life, guided by the moral sense, because he is the final end of it; and the final cause, says St. Thomas, has priority over all the others. " [14]

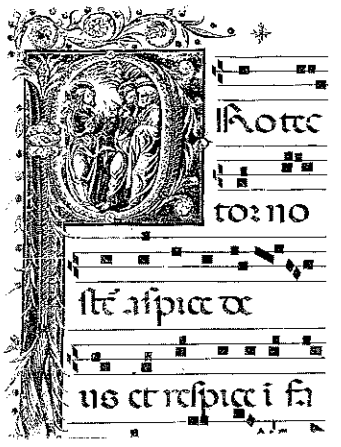
Paul VI added:" It is therefore of supreme importance that in the realm of our activity this axis should be clearly defined, with that true righteousness that makes the life of man good, perfect, and happy. " To this end, we must now make

clear what the criterion is which should have the most influence on our conscience when we are confronted by the problems of life and how, through our conscience, we can be the mediators of its actualization in reality.

Actualization of the principle of the dignity of human life

In a conference which he gave at Fordham University in 1983, Cardinal Bernardin advocated a coherent " ethic of life " [15]; he did not conceal the difficulties before the medical profession in the maintenance of its activities at the service of life as we understand it and to find the way to formulate a satisfactory reply to the difficulties encountered. For, if the questions posed are old, they are presented " in a new context which shapes the content of our life ethic. " " In an age when we can do just about everything, " asked the Cardinal, " how are we to decide what we must do? ... In an age when technically we can do anything at all, or almost, how are we to decide, from the moral point of view, what we should do? " In an age when the legal profession often gives us permission, and the courts are inclined to pardon any infringement of the law when public opinion sees this is the way to free someone from a constraint which was making his life a prison, a period of history when man is tempted to construct his existence like an engineer who is free to assemble the pieces of an engine as he pleases, [16] as John Paul II asked during his last visit to Germany, " What can I do? "

If we want to act as human beings, this question sends us back to our conscience, for it is our conscience in the last analysis that will decide how to make our behavior consistent with our ethic when it is life that is at stake, as " in genetic problems, abortion, the death penalty, modern warfare, and the care to give terminal patients, " [17] or in the attitude to take towards torture. One cannot defend life in one instance and sacrifice it in another. Every doctor is called to add his witness to the overall, coherent, and united testimony that modern society is waiting for in regard to life; for the Catholic doctor, this means willingness to join the adventure of the religious conscience, such as it is presented by the teaching of the Faith. Catholic medical staff must be in the front line in formulating a reply in professional practice; this task often seems difficult because, as Cardinal Berardin pointed out, " We are far from having reached a consensus among Catholics on questions related to life. " [18] That is a beacon for the path that I would now like to take.



The role of conscience

This question about what I can do as a Catholic doctor or health worker in the concrete situation of my professional life to testify to the absolute meaning I give to life sends us back to our conscience. As the Declaration on Religious Liberty, *Dignitatis Humanae*, states, every man has to search for the truth, to adhere to it and conform his life to it [19]; let us take careful note: it is not a question of an individual measure that allows me to be the judge of what is good and what is bad, but a recognition of my vocation to actualize the universal teaching of the Church on the absolute dignity of human life in the *hic et nunc* of the situation in which I find myself, and, insofar as my means permit, I am responsible for giving the priority it demands to this value of making life more respected. It is a question of assuming a religious point of view, that of the interior law of development of beings as established by the Creator. Moral prescripts are therefore beacons which guide me towards that human fullness to which I am called — along with others — insofar as I am a person. If,

as Pope Paul VI said, " Conscience is solely responsable " [20] for my qualification as a religious person in this enterprise, it is because it allows me to enter freely into the providential plan of God for the world, known in Christ and explained to me by the Church.

The cornerstone of the moral order

Paul VI makes clear the unique role of conscience: it is not left to itself; its exercise demands " an element which it lacks, it demands a duty, it demands an end transcending the action, it demands intervention of free will, the concept and the existence of good, [21] this Good which in the last analysis is God. " [22] Only adherence to this truth will allow the building of a society where each one is recognized as a person, a free being; one must take part in the construction of a society built on a new logic and a standard of values different from those of present-day society, which allows individuals to be sacrificed to the interests of others more powerful and stronger. The cornerstone of a society humanized by Christianity consists in the affirmation, in all circumstances, of the priority of human life, for, only the putting into practice of this principle can assure the right functioning of the " mechanism " within us which constitutes the moral imperative to treat life as the " supreme subjective value. " [22bis]

That is why, as John Paul II recently recalled in Münster, the primary truths of Christian ethics are the best protection against initiatives undertaken by man; he cited, by way of example, the attitude of Cardinal von Galle, who " to the doctrine of absolute self-determination by man opposed this: human existence is created for God, loved by God, borne by him. This origin ennobles the human being but also imposes a duty on him; he will become truly human if he binds himself freely and faithfully to God, guides his life to Him, the Supreme Being..... Otherwise he becomes a slave, he loses his intrinsic dignity: disorder, chaos, and death are the tragic consequences of this. " [23]

This text contains two statements that we shall have to look at again if we want to understand this responsibility proper to the Catholic professional person, the doctor, with regard to life.

a) " A man will become truly human only if he binds himself freely and faithfully to God "; that is, for the believer every human being is in a process of becoming and the success of his life depends on his acceptance of this structural, ontological bond which ties him to God. The development of man thus has that precise meaning given it by *Populorum Progressio*, a progress towards greater freedom, a " passage " from misery to the possession of the necessary and from there to the acquisition of cultural goods; " more human still, the recognition by man " of supreme values, and of God who is their source and end. Finally, still more human is, above all, Faith, a gift of God received by the goodwill of man, and unity in the love of Christ, who calls us all to share as children in the life of the living God, Father of all mankind. " [24]

b) Here we find the second statement of John Paul II: God alone is able to direct all the energies of society towards a consensus which recognizes the intrinsic dignity of each, at the risk of initiating disorder, that is, of allowing some to be subjected to the egoistic ends of others. So the dignity of life — the gift of God — is the primary principle of organization of any society for man; it is the fundamental value on which the moral order is based, without which there is no stable society. " Man has the privilege of knowing the order in which he lives, and the first imperative that arises in him when he discovers this order is this: live according to this order, that is, according to your nature, respect your being..... Be good, avoid evil. The idea of good and evil is at the source of our actions, and it is, entirely on its own, [the rule] of our conscience. It is from this that the entire moral system can then be said to derive "; it rests on the interior dialogue of conscience, of which the basic moral need is " to conform itself radically to our rational nature, which is impregnated with a transcendent need that [finds its source] in the creative will of God. " [25] " God is the axis of the life of man guided by moral sense, " [26] an axis which must direct our actions. Here we are at the point of a Christian life which accepts that God makes himself known to our conscience, reveals himself; this is an interior way of daily conversion which makes our thought, our judgements, our consequent actions dependent upon — insofar as possible — this criterion. This is the first priority of the dignity of life, the recognition of it as determining my actions; to do nothing that might divert someone else from discovering this truth, to do what is in my power, in my own situation, to help others discover this truth and create the right conditions for it.

Religious conscience as mediator of life

The believer is not alone in defending life; we know perfectly well that if we have this pretence, we shall run up against a feeling of rejection on the part of other men and their disgust at the injustice done them. But then, if believers and unbelievers can have in common a concept of life up to the point of making it a priority moral imperative, where do they differ? Are they not bound together in recognizing the same value? On the other hand, the fact that one believes in the existence of God while the other does not take Him into account—cannot this be reduced to a conflict on a purely intellectual level, without practical

consequences? The question that is posed, behind this debate, is that of establishing why we affirm that the decision which makes man the arbiter of what is suitable for the development of life really goes against man; we must establish why the absolute prohibition of any action against life is not an obstacle to the progress of man.

This discussion is more often than not carried on in terms of conflict, each of the participants wanting to convince the other of his error. But we know that from such tournaments there has rarely resulted the conversion of any of the participants. We must therefore go beyond the the terms of the objection made us: we must learn the art of making apparent the reality of the progress of man in God; we must prove that it can be of a quality other than that produced by an imagination left to its own devices, that it is found at the end of another way of reasoning, in the acceptance of a different perspective on life, even if the lacerations needed to get there are painful. In a world of fear and uncertainty, the Christian must show that an authentic religious life places us in a relationship with God in which there is no room for fear; he must show himself capable of giving a meaning, a new meaning, to life.

If the believer confronts the present contradictions of life calmly, he will find in his religion an explanation of the world, an affirmation of the truth, the foundation of which is the living God. If he believes that it can be the " central mover and foundation of modern culture " — that is to say, beyond the explanations of long ago, which may have seemed like constraining rites and prohibitions, he understands God in what makes Him completely different from this world, his Gratuitousness, [27] Love, " God is Love " [28] — then the precepts of religion are no longer a catalogue of things to be done or avoided, but landmarks that tradition has recognized as indispensable for following the way of Truth from which we would otherwise stray. " Only a vision (of faith, we would say) of the mystery of God lights up the modern world " [29] and allows a reconciliation between men; it leads them to see in the other a being journeying towards God, and, as such, nothing which turns him aside from his end is acceptable, however it presents itself; on the contrary, the believer helps the other to overcome the contradiction in which he finds himself and establish himself in the Truth.

But some will say that there are human beings who have not yet obtained or no longer possess this psychic ability to " die (to themselves) and entrust themselves to God. " Should not their life also be respected?

It must, on the one hand, for reasons of sound common sense. If in fact it is human lives, even if just coming into existence or handicapped, that society can decide to sacrifice, there will be no limit to the dominion of man over man and to the violation of his basic rights. Totalitarian regimes offer in our age an example of how just belonging to a certain race or holding a certain belief constitutes a blemish such as to deprive a human being of his right to life.

This reason is sufficient in itself to make us adopt, out of prudence, a respect for the primacy of life under all circumstances. There is, however, another which confirms this and which is derived from our faith. Life, we say, is sacred, in the sense that it goes beyond a threshold man cannot pass over without pretending to be the author of life. That is why, on the contrary, he recognizes that he is not its author and he knows that this gift made to everyone is a vocation to a higher life and that it is an act of religion to respect it; it is an act of faith through which he enters into the plan of God for the world by adopting in his behavior the logic and discipline demanded by this work. The attitude he adopts translates into fact, at the point at which he finds himself, the existence of a God who is Love and Gratuitousness in spite of apparent contradictions. A responsible act which makes him a mediator of life. He knows that every human person is called to holiness, even the most physically or psychically handicapped; he knows that God " lays hold of him at the very center of his person, that fine point spoken of by the mystics. A mysterious happening, far beyond psychism and any other consideration which makes a man pass from death to life, converse with the angels and breathe already in eternity. " [30] It is towards this spiritual event properly so-called that the ethic of the medical profession is ordained; in this sense, it can be called a " life ethic. " Every man must " agree to be saved by the Other, " and it is by helping him make this decision, in respecting this calling, that the medical and health care professions make human the techniques which they use.

Conclusions

The reflections we are going to make can be grouped into a number of propositions, which will serve as conclusions:

In the face of our uncertainties and divisions

We should not be astonished at the groping that exists in this domain; clarifications are necessary, given the fact that " the general attitude of society with regard to respect for human life " has itself changed, placing man at the very heart of this " contradiction " (Pius XII) of which we have just been speaking, since, at the very same time that the rights of man are being glorified along with the defense of life, practices which threaten these are being recognized as legitimate and principles which lead to their denial are being held to be true. In the face of this " capital mistake, " [31]

which vitiates, without our realizing it, the foundations of modern life, it is not astonishing that contemporary man is troubled and that Christians hesitate to diagnose its nature or to recognize they are able to cure it.

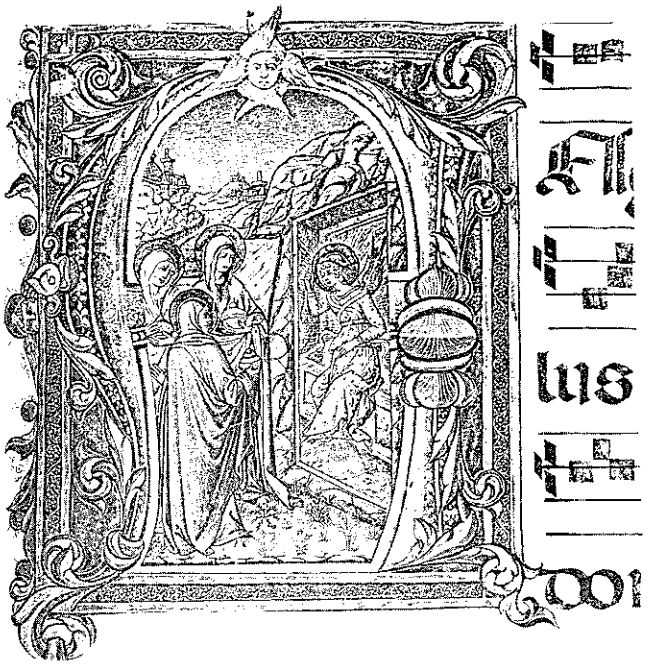
To adopt an attitude of faith

" The Christian knows that faith will not lead to a magic solution nor will it do everything, " [32] but he also knows that by " keeping firm the nature of his faith " he can undertake a " courageous but prudent reconsideration of the values in question, and primarily the values that are interior for man, " [33] and so get out of present uncertainty by reestablishing and deepening the bond between his faith and his actions: The break that presently exists between the former and the latter is, in fact, as the Council says, " the evil which must above all be cured. " [34]

Wherein the primary truth is the recognition of the primacy of the dignity of human life

The Christian is thus called to make a jump which connects the deepening of his faith with the responsible exercise of his conscience, which has become religious again.

The ethic of life will be " coherent " if it is built around unquestionable points. When he was addressing the participants at the Congress of the International Federation of Associations of Catholic Doctors, Pius XII enunciated this basic truth; " Every human life must be integrally respected. " That is, " medical ethics resides in absolute respect for the person, who is the recipient of a life from God. " [35] " [Thus] life escapes the power of man, " even if he, " for reasons of parentage or social superiority, exercises his authority in so many ways [over it], it is withheld, as such, from this authority. " [36] In fact " man, insofar as he is a being endowed with intelligence, free will, derives his right to life directly from God, of whom he is the image, and not from his parents, or from a society or human authorities, be they whatever they will. That is why life is a gift " [37]



In practice, this means: A vision

This is the principle in terms of which abortion and euthanasia must be judged to be incompatible with the " totally encompassing vision of man in the Gospel " [38] and why " no one and nothing can authorize putting to death an innocent human embryo, for the human being, from its conception up to its death, cannot be exploited for any end of this sort. " [40]

This is the basic reason why the Church " cannot pass over in silence the almost total liberalization of abortion " in so many countries; she " cannot pass over it in silence in the face of society when any serious study of the present situation regarding abortion is rejected because it is inconvenient and touches on something which is

taboo "; she will continue to demand that " the results of embryonic and psychological research on pregnancy and abortion be better known and taken into account when decisions are made about individual persons " [41] and asserts that the mantle of silence must not be allowed to descend over them, but that they should be faithfully placed by the media at the disposal of the public.

Such is the explanation given by the *Instruction on the Dignity of Human Life* [41bis]; it is because she accepts life in all its meanings and at all levels, especially that of spiritual development, which presupposes a group of persons communing with each other " in a mutual and personal giving " that she cannot make room for a permissive evolution of *in vitro* fertilization.

The defense of life from its first moment is not the only domain where the " service of life " which constitutes the final end of medicine has to be exercised; the task of doctors in equally to " safeguard its evolution and development in all fields of existence with respect for the plan conceived by the Creator. " [42] Here we touch on the fact that the patient is not just a body that is suffering, but is in a " substantive unity " with the spirit. [43]

In practice, this means: A line of action

The translation into life of the ideas that have just been expounded presupposes that Catholic doctors and medical staff will create the conditions for their realization; otherwise we shall experience great difficulties in putting into effect this fundamental ethical necessity. A judgement must be formed, and that can only be by active participation in the ecclesial community. For those who exercise a professional activity, this operates by means of *ad hoc* associations. Dialogue cannot take place in democratic societies such as ours unless there is allowed to develop an associative phenomenon which will enable all tendencies to express themselves and to demand the respect that is their right. Every individual is part of the tissue of society and must, in order to exercise his responsibility there, understand the depths of his profession, and find support in the community of thought and action that unites him to those who share his faith Indeed, your belonging to associations of Catholic doctors should be viewed as an essential part of your witness to respect for life; there you find yourselves among friends so as to be able to engage as Christians in your profession in accordance with the concrete forms with which everyone is called upon to express his faith in Christ

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NOTES

[1] CARDINAL NEWMAN *Pensees sur l'Englise*, Paris Cerf 1956, p 306.

[2] Message for World Day of Peace, 1 January 1977.

[3] *Ibid*, par 5.

[4] ST. AGUSTINE: *Commentary on Psalm 99*, in A. TISSOT: St. Augustine Mappus 1960, p.116

[5] *Gaudiem et Spes* (G.S.) 1.1.

[6] J. ROSTAND: *Pensees di un biologiste*, pp 106 & 130, cited by R. Lenoble: *Histoire de l'idee de nature*, Paris, Albin Michel 1969, p.377.

[7] PIUS XII: Christmas Message 1956

[8] *Address to the Pontifical Academy of Sciences*, 12 November 1983, in *Documentation catholique* (D.C.) 1983.1984. It should be noted, on this subject, that an *Institut de la Vie* was established in Paris some years ago by Professor Maurice Marois; this organization, which now has repercussion throughout the world, numbers among its members many Nobel Prize winners and men of learning from all walks of life and all branches of science. The remarks made by the Pope find their confirmation here, since Life is a terrain on which men are meeting to see how they can defend and promote it.

[9] *Message for 1 January 1972*, par 3.

[10] G. BERNANOS: *Journal d'un cure de campagne* Paris Le pleiade 1961, p.1112

[11] Audience of 10 March 1971, in D.C. 1971, p.309

[12] IIa IIae, 1.3, quotes by Pope Paul VI

[13] POPE PAUL VI, *ibid*

[14] IIa IIae, 1.2

[15] A translation of this address by Cardinal BERNARDIN is to be found in D.C. 1984, 443-447.

[16] POPE PIUS XII: *Christmas Message* 1956

[17] CARDINAL BERNARDIN: *op. cit.*

[18] *Ibid* 447.

[19] *Dignitatis numanae*, par. 2.

[20] PAUL VI, in D.C. 1971, 309.

[21] IIa IIae, 1

[22] PAUL VI, in D.C. 1971, 309.

[22bis] Audience of 12 July 1972, in D.C. 1972, 703

[23] Pilgrimage to Germany of JOHN PAUL II, in D.C. 1978, p.95.

[24] *Populorum Progressio* (P.P.) par 21.

[25] Audience of 12 July 1972, in D.C. 1972, p.704.

[26] PAUL VI: Audience of 10 March 1971, in D.C. 1971, 309

[27] A. JEANNIERE: *Let fins du monder*, Paris Aubier 1978, p.95

[28] I Jn. 4,8.

[29] A. JEANNIERE: *op. cit* pp.96-97

[30] J. BERNAERT, in *Etudes*, juillet août 1950, pp.59-60.

[31] *Redemptor Hominis*, par 17.

[32] G. FESSARD: *Libre commentaire su un Message de Pie XII, Noel 1956*, Paris Plon 1957, p.8.

[33] PIUS XII: *Christmas Message 1956*.

[34] cf. PIUS XII: *op. cit.*, G.S. par 41.43.

[35] Quoted by PAUL VI, in *Osservatore Romano* 12-13 October 1970.

[36] At the General Audience of 26 April 1978, in D.C. 1978, 453.

[37] JOHN PAUL II: *Address to the Catholic Association of Health Care Personnel of Italy*, (ACOS) of 26 January 1980, in D.C. 1980, 215.

[38] To a group of men of culture on 27 February 1974, in D.C. 1974, 406; cf. the Declaration of the Congregation for the Doctrine of the Faith of 5 May 1980, in D.C. 1980, 697

[39] Declaration of the Congregation for the Doctrine of the Faith, *op.cit.*

[40] JOHN PAUL II: *Address to a group of experts meeting at the Pontifical Academy of Sciences* on 23 October 1982, in D.C. 1982, 1028: *Address to the Medical Congress of the " Pro-Life Movement "* on 4 December 1982, in D.C. 1982, 191; *Address to the World Health Association*, on 29 October 1983, in D.C. 1983, 1067

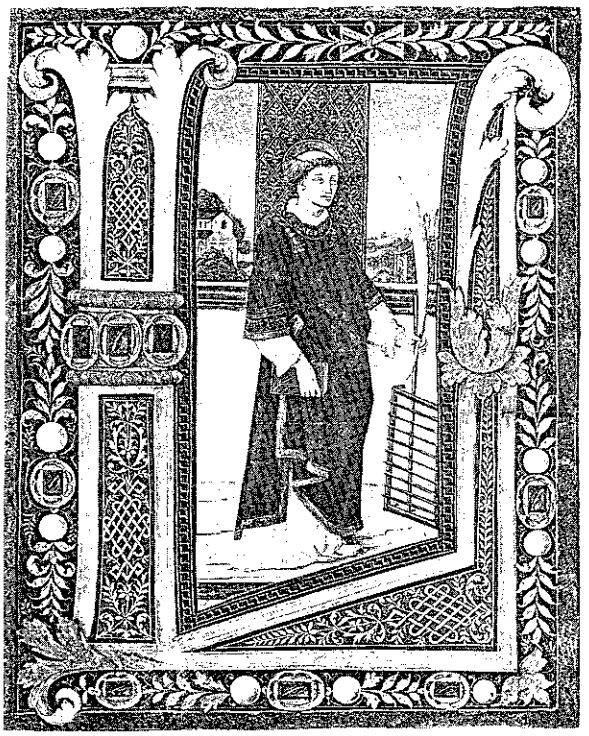
[41] Discourse at Münster, *op. cit* 577.

[41bis] *Instruction on Respect for Human Life in its Origin and on the Dignity of Human Procreation-Replies to Certain Questions of the Day*, 1978 Cf. B. HONINGS: *Ce qui est faisable n'est pas toujours a mettre en oeuvre*, in *Dolentium Hominum* 1987/5, p. 58.

[42] *Address to the Congress of Catholic Doctors*, 3 October 1982, in D.C. 1982, 1029.

[43] *To a group of experts*, in D.C. 1982; *Address to Italian Doctors*, 27 October 1980, in D.C. 1980, 1037

Round-Table Discussion



Prospects for the Humanization of Medicine

Medical Care from a Buddhist Standpoint

Kazushi Itoh

During this century, the progress in technology has been simply astounding, but the same can be said in the field of medicine. Poliomyelitis and small pox have practically disappeared from the face of the earth. Human beings do not have to suffer from such diseases any more. Even with cancer, the sickness causing human beings the greatest suffering, the day is rapidly approaching when, with progress in operations and development of effective anticancer drugs, human beings will not need to fear death.

Even in Japan, where tuberculosis was considered a national sickness, it is no more a fatal disease for young people. We cannot say that in has been completely controlled, but the tuberculosis which continued to take the lives of thousands of young people with future dreams has practically disappeared, and people rarely die from this disease. But whether this kind of progress in medicine is bringing real happiness to mankind is very questionable.

At one time human beings trembled with fear that sickness would take away one's life. Once taken sick, no matter how slight the sickness might be, one was near to death and its terror haunted the sick person. The sick person would naturally pray to God or Buddha; so would the family and relatives. If, fortunately, death was avoided, prayers of gratitude would be offered to God or Buddha. Can we not say that at such an age, we human beings always had a fear of the power of nature and the humble view that we were allowed to live through that power; not that we were living by our own strength, but we were allowed to live through some great power that governed the earth. I can say that each and every one had this idea.

However, with the progress of modern medical technology, no sickness threatens the life of a human being. This has caused the spread of a feeling of arrogance and conceit that we human beings are living by our own intellect and power, and at the same time, has it not made us lose the feeling of the fear of God and Buddha which was innate in everyone? Arrogant human beings are steadily increasing; I think this is the state of modern human beings. When we think of this, I feel that it is necessary that we consider whether the progress in medical technology which was meant to take away the unhappiness of human beings, has not, on the contrary, led men to lose their human identity and forget real happiness.

Here, I would like to review the different types of medical advancements.

In the field of diagnosis of diseases we can mention the fact that through the progress of technology in this field, the possibility of an early discovery of various diseases has greatly increased.

The diagnosis of cancer is one example. Until recently, cancer could only be detected when it had advanced to a certain stage and had spread from a primary organ to various parts of the body; it can now be discovered at an earlier stage and diagnosed, and efforts to give medical treatment have been made possible.

This is largely due to X-CT, NMR, or ultrasonic tomography and other diagnostic technology which had not been thought of previously.

Besides this, we could discover through surgery what was taking place in the interior of the body before, but now, through the development of the endoscope, we can discover from the outside what is taking place in different parts of the body. This is a great help towards the diagnosis of diseases.

Through diagnosis by biochemical means, material can be identified and measured, the fixed quantity of hormones can easily be determined, and the existence of a lack of matter in the body can help us diagnose the development of other diseases. On the level of micro-

scopic research, the discovery of new knowledge concerning genes is enabling us to diagnose and offer medical treatment for diseases which have hitherto been out of our reach.

As explained above, it is no exaggeration to say that modern medicine has made rapid strides in the field of diagnosis of diseases, so that there is practically no disease which cannot be accurately diagnosed.

What occurs, then, in the field of treatment of diseases?

At the fundamental level, through the growth of genetic engineering and gene manipulation, it has been made possible to create new life which did not exist on earth previously. This, in turn, has brought about progress in the treatment of diseases connected with genes. For example, if there is something lacking in the genes causing a certain disease, through gene manipulation (insertion of the defective gene) or through the application of similar techniques, it has become possible to produce new treatments.

It is the same with cancer. Besides treatment through surgery, effective medicine for cancer therapy is being developed, and for cancer of certain internal organs, a method of treatment heretofore inconceivable is being developed. For example, for the treatment of leukemia which has often been called cancer of the blood, a new medicine, free from any harmful after—effects, is being developed which will bring about a complete cure.

Moreover, in the field of transplanting internal organs, development is so remarkable that transplantation of the cornea has been practiced for a long time. Besides this, in diseases of the heart, kidney, liver, and lung which were considered fatal to human beings, through transplantation of healthy organs it has become possible to acquire sound bodies again. Most probably further developments will continue in this field, and the day will come when practically all the internal organs may be successfully transplanted.

From the above considerations, we may say that modern medical treatment, which was meant for mankind, has progressed in a direction without direct relationship with the well-being of mankind. Especially in the field of transplantation surgery and the medical science of procreation, the development of new methods of diagnosis and treatment seems to be no longer on the same plane as previous medical science tread, but has changed into a new human technical skill.

Some matters involved differences of opinion between science and religion, but there was a mutual influence. Now, however, scientific techniques, particularly the development of medical technology, no longer need the evidence of religion, and actually seem to be advancing quite independently.

Here I would like to talk a little about present medical treatment in Japan and consider what role religion should play in medicine.

At the present time in Japan, excluding the transplantation of organs, practically every kind of medical treatment, even what is considered the most modern, can be received. Diseases which were believed incurable and patients who were afraid of approaching death which was unavoidable now have hopes of regaining their health through full use of modern medical technology. They no longer have that mental uncertainty. Many diseases have changed from " incurable " to " curable, " which is good news to patients, However, diagnosis, tests and examinations, and medical treatment have brought about physical stress and suffering to patients, giving them the impression that the existence of diseases comes foremost, rather than the consideration of the human person. A typical example of the above statement is the procedure in heavily equipped medicine where tubes are inserted into the body of a person on the verge of death. For persons suffering from dyspnea, a respirator is connected and oxgen is supplied by force. For patients who cannot eat by natural means, the necessary nutriment is added to the drip transfusion and injected through the blood vessels, to prolong the life of the human being. No consideration is given to the patient to prepare him for the most solemn moment of death.

At one time, was not " death "the most important moment for a human being who had through his or her life nourished and prepared for the ultimate purpose of life? Was it not the moment when the patient could bid farewell to his family and friends, praying for their future happiness to God or Buddha, then depart for his or her last journey? Instead, he or she lies in a cold room, without family or friends — unconscious — (we cannot say a person is a human being any more) — left entirely in the hands of others to do as they will, in order to prolong life. There is no longer a human touch, but merely machines and figures acquired from tests and examinations, and the human being seems to have been pushed behind the " ghost " called science.

If we consider things in this way, then modern medicine, if it continues to develop without any control, will become a dry, purely scientific study without a touch of humane feeling and not add anything to the happiness of man. Whereas medical treatment should be extended to help the patient overcome the uncertainty of death, present care disregards the human being as a person and is only concerned with data and figures from which conclusions are made and treatment is continued according to one's skill. This is not normal.

At one time in Japan, in the Medieval Period, there was an institution called the *Mujyoin* where terminal patients were given care. It is said that Buddhist monks who were severely

sick were taken there, where they could spend their last days devoting themselves to prayer — to die a gentle and peaceful death — to go to the Land of Happiness; they had the opportunity to enter into a state of perfect spiritual concentration. However, as is frequently pointed out, since it is considered that the modern Japanese do not have a spiritual conviction, notice that a patient has cancer is given only in rare cases. It is difficult to tell patients that death is imminent and allow them to spend their days in such an institution. However, from the standpoint of the dignity of human beings, is it right to merely prolong their lives through medical treatment in an unconscious state? Many people are beginning to pose this question.

Now on the verge of leaving this world, the most important thing to them is death, and this is not something to be decided by data and mere figures. " Every living thing must, sooner or later, meet death. In preparation, pray to Buddha daily, trust and rely on Buddha, and live in the faith of the Buddhist. Never forget that we are living in the hands of Buddha. " This is the teaching and belief of Buddhism. Everything is according to the will of Buddha; life and death are already in the hands of Buddha from the time of our birth and cannot be changed. Medicine must, in the future, aim at taking the whole human person into consideration and make steady progress in treatment with this in mind.

To achieve this, with the advancement of medical technology, ethics for health and life must be established. Furthermore, greater importance should be attached to human nature, and " quality of life " should be made clear. Last but not least, there should be communication between medicine and religion.

There is one thing that we should not forget: " We cannot conquer all diseases and will not be able to do so in the future. We human beings can only live with sickness and possess the knowledge to fulfill our life's mission. " This is what I would like to convey to you today.

In the 16th century, Ambroise Pare of France said, " To cure sometimes. To relieve often. To comfort always. " I would like to add to his words " Medicine can never control the whole man. "

These words still live today, and we must not forget them.

Dr. KAZUSHI ITOH
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To Effect Change a New Alliance between the Patient and the Health Care System Must Be Established

Pierluigi Marchesi

Christian reflection on the topic proposed cannot dispense with considering the profound meaning of human suffering. In fact, as the Pope affirms, " Following the Gospel parable, it may be stated that suffering, present in diverse forms in our human world, is also there to produce love in man, precisely the disinterested gift of one's own ' self ' in favor of other men, suffering men. The world of human suffering unceasingly invokes, so to speak, another world—that of human love; and man in a certain sense owes that unselfish love awakening in his heart and in his works to suffering " (John Paul II, *Salvifici Doloris*, 29).

This highly positive vision of suffering defines the perspective within which I move to reconsider the meaning of the Christian presence in the world of health as seen by a son of the Hospital Order of St. John of God, a name familiar to all languages. Rather than theological argumentation, I offer the testimony of one who has acted as a nurse in the sphere of health care and is still involved with its problems as a coordinator responsible for the work of his Brothers.

In the 200 hospitals of our Order distributed among 46 nations, the subject of humanization became almost explosive towards the end of the 1970's. At that time we realized, day after day, that our activity, the quantity and quality of our involvement in hospital realities, was incapable of eliminating a subtle but persistent shadow of bitterness, of daily dissatisfaction. Some of us were seized by bewilderment after four centuries of service to the needy and the ill in different parts of the world; the question even arose as to whether our presence in hospital facilities run by us still made sense as useful and meaningful for ourselves and for those who, like the sick, turned to us with trust and hope.

1. Health Care: Between Technological Revolution and Biomedical Specialization

What had happened to cause such disturbance around us? Many things had changed: particularly, the world of health care had finally received a substantial boost from direct or indirect government interest in many nations—not limited to Europe—which prepared to mount upon the triumphs of medicine and the promising successes of widespread, guaranteed medical attention. Another phenomenon was taking place which has reappeared today even more massively—the overbearance of medicine when seeking to define " the scientific-technical-technological-organizational order " as the only horizon within which to restrict the human.

The time had come when medicine, putting aside philanthropy, could at last guarantee health. Man's happiness itself was within reach: it sufficed to invest in research, reform, means in order for the health problem to be victoriously and definitively resolved.

But the scientific commitment of medicine—which is praiseworthy and has obtained so many results—has as its consequence that the citizens who turn to health experts do so with ever-increasing insistence, and the higher the health offer is, the more patients' dissatisfaction increases.

In the face of this enormous contradiction, we began to investigate the reasons for such a paradoxical reality. What is today's patient asking for? Something quite simple but revolutionary: before ending up on the " playing field " of instruments, drugs, tests, and hospitalization, to be received on the field of meanings in all that concerns life, happiness, pain, and death. In other words, he is asking that medicine today examine—and not eliminate—the human order to integrate it with the scientific one.

We have discussed at length the " upheaval " of medicine. The true upheaval in the field of health—which is " biological, psychological, social, and, for those with faith, transcendental wellbeing "—is something which TRANSCENDS illness: it is the particular, subjective vision of the world that man, a being rich in meaning, possesses and illness upsets when not itself generated by the loss of meaning in life (let it suffice to recall the tens of millions of persons dependent upon psychoactive drugs). And has not contemporary medicine placed in the background the ancient, ever-present link in every living being between nature and culture, body and soul, biological and psychological, human and divine, individual and collective, the part of one's destiny which is determined and the part which is determinable?

In the name of a feverish though positive search for technological certainties, even medicine threatens to tear man away from his origins, breaking the ties to his roots, casting him lost and bewildered into a world like that of health care, which presumes to know and save him. I shall devote a thought to the experience of pain, to which medicine feels duty-bound to offer a response. Unlike love, which arises between two and is already a dialogue, pain is, on the other hand, rooted in absolute individuality and is a practically incommunicable experience. Every day we attend persons suffering in an unspeakable way as a result of what is not referable to a specific disease, to the illness itself. And the one suffering, to convey his pain to whoever beholds him, relies upon the language which his culture and worldview place at his disposal. It follows that to be therapeutic in such cases the scientific approach, using this or that drug, is not enough, for the analysis of pain is above all the analysis of the language and worldview of the one undergoing it

2. The Upheaval of Medicine

Can we ask medicine to harbor this upheaval involving the humanity and individuality of the patient? Perhaps we cannot ask this " science " for so much. But we have the right as men and as religious to raise our voices so that the world of health will enter into a vision definitively breaking the conspiracy of silence which otherwise forces man to undergo his condition in that torment of the soul which common parlance terms anxiety.

The ill, caught between their anxiety about getting well and the excessive power of the technological apparatus, become an uncomfortable object. Individual professionals—doctors, researchers, nurses—together with virtually the entire health system, irresistibly attracted by the potentialities of technology, feel diminished if they must devote themselves to simply treating a patient's sore, satisfying his basic needs, listening and speaking to him.

In this way, the dehumanization of medicine, as a typical product of " modernity, " has taken root at the heart of our complex society, the fruit of progress which is as illusory as it is harmful.

To change things, we must restore meaning to the sociomedical enterprise, rediscover the profound sense of being-a-man-who-suffers; only by understanding this can we establish a new alliance between the patient and the health system.

For, as John Paul II has reminded us, illness and suffering " ... are not experiences which concern only man's physical substance, but man in his entirety and in his somatic-spiritual unity. For that matter, it is known how often the illness which is manifested in the body has its origins and its true cause in the recesses of the human psyche " (*Dolentium Hominum*, 2).

Humanizing medicine is im-

possible until all health professionals abandon the illusory idea that medicine is a science, not a practice; it is, rather, an art which avails itself of different sciences. An art which is closely linked to the artist, to the characteristics of the man who is a physician, exposed to successes, errors, feelings, ideologies, prejudices, i.e., to his subjectivity, which, in any event, always has a great effect upon his relationship with patients, in addition to the relationship to his own knowledge.

In this ethical-epistemological redefinition of medical practice, it has provided valuable assistance to compare and contrast with those belonging to other religious traditions and cultures, with whom the St. John of God Brothers have had contacts in different countries from the beginning of their history. It is not by chance that we are assembled here today, called from the most diverse origins, bearing wounds from separations much more serious than those which are linguistic and geographical, to communicate our experience as men committed to the fight against illness.

Our meeting indicates that something can be done—the ecumenism of the vocation to " care " for sick men strikes us as a sign of the times which we would like to take up so that together we may recast a model for humanizing medicine capable of resolving at a higher—and perhaps more effective—level the divisions which our doctrinally diverse histories have proved unable to overcome.

For an observer living within the Catholic Church, there are many solid bases enabling us to build bridges among those working in the field of health, on a much higher plane than mere technical cooperation.

In this respect, how can we fail to mention the wealth we receive from the meaning given to life in the mysterious dialogue between time and eternity in Buddhism, the body-spirit unity found in the purest Hebrew tradition, the sublimation of physical pain with a view towards eternal life taught by Mohammed, and the importance and centrality of faith in God for the protestant churches?

I feel we are faced with different gazes aimed at the single grandiose reality of the relationship between humanity and transcendence, not with elements of separation.

We are here to testify to this multiple unity and this desire to place our differences at the service of man, not for proselytism, but to unify our efforts to construct the Kingdom of God, which welcomes the healthy and the ill, all men tried by the limit constituting physical weakness and the fear of death.

3. For Holistic Medicine

Comforted by religious faith and convinced that the medical domain can become more humane, we venture to formulate our proposal for a more holistic medicine which, as a criterion at once operative and epistemological, will consider the fundamental unity of the human body and spirit. In his individual oneness and body-soul unity, man is an incarnation of the spirit and thus capable of speaking, loving, and suffering—caring for him means taking on the significant wholeness of a being inseparably made up of psyche and body.

For the Christian, this is also the nucleus of his faith in the Incarnation. We believe that God Himself, to save man, has become " incarnated " precisely by assuming the condition of a servant to redeem man. Here lies the sublime summit of humanization and the model for every ideal of " service ": God, according to Christian faith, has assumed the condition of a servant; He has become man, accepting the tremendous experience of human suffering and death, a sign of supreme dedication, not only symbolic, but concrete in such a way that the divine effectively enters history—the " history of salvation. "

Medicine must thus, in our opinion, become a science of nature and man, aware that, without abandoning the scientific aspect, it has to rediscover its first and last reference point—man, a subject in addition to being matter, history, feeling. We cannot reach man solely through scientific instruments and the knowledge of organs.

Man has an additional organ in creation, the psyche, the soul, which, unlike the case of animals, generates, among other things, self-awareness, the consciousness of death, the desire for happiness.

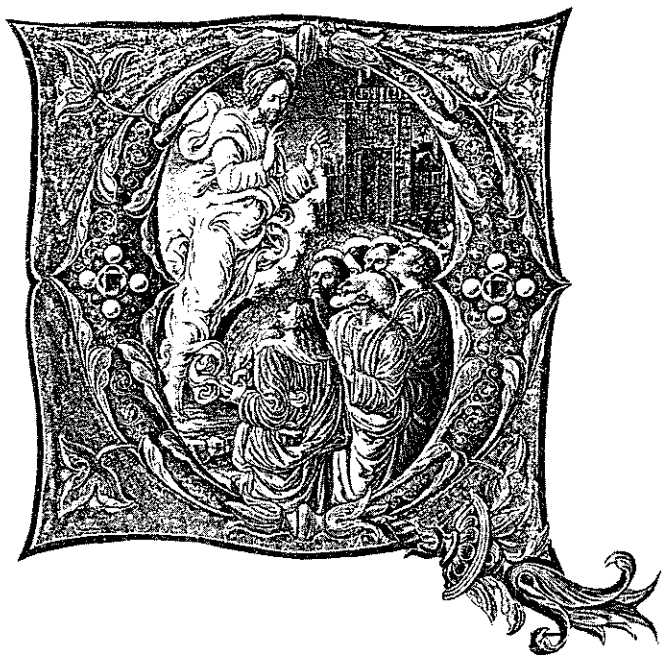
To return to the humanization of our work, once we had clarified that our anthropological—and hence religious—vision was deficient and that we had eliminated something vital in the ill and in ourselves, we asked about the reason for this removal, which, as I hope I have shown, represents a source of human and therapeutic troubles. This understanding has also been a fundamental operation for us so as not to ask medicine any longer to be humanized, but to ask of ourselves a new way of practicing medicine and providing care. Why have we removed our humanity? Why do we not experience the therapeutic and health care relationship as the gift of ourselves?

The wonderful prospects for humanizing relations with the patient—a factor, it should be noted, which is highly therapeutic when a global, holistic vision of our profession is possessed—come up against the painful need to modify significantly our role, our personality in certain basic attitudes. To humanize a hospital—or, rather, introduce into the hospital the dimension of humanity, understanding, respect, and response to the patient's needs and motivations—means that

all health professionals must seek continual improvement—a kind of leap which few universities have proposed, beyond the arrogance of power and so-called scientific knowledge, to plunge into a process of identification with the suffering individual, a process which enables us to comprehend before acting and give rise to hope, trust, and a therapeutic partnership. The barrier to humanization is not outside of us; it is not in the sciences and their deficiencies, but inside of us. It is a barrier maintained by our mental indolence, by a pronounced cultural limit, and by the lack of maturity of and in our personhood.

Once the reasons for the removal of our humanity had been identified, we initiated a host of encounters, of formative experiences oriented towards completing our cultural baggage, but, above all, towards spiritual, personal, operative enrichment aimed at transforming our daily acts.

A first significant result—at least within the Hospital Order of St. John of God— has been attained: today our brothers in religion as a final goal no longer dream of fleeing to third world countries, at least not until the deep-seated needs of our world have been satisfied. The process of humanization of our hearts and our minds is, as may be readily imagined, ongoing, permanent, and can never be regarded as fully accomplished. This has represented a scourge for us and has made us more restless, but also less nostalgic and less attached to that slice of the past which, for human reasons, we tend to idealize. But the solid core of our past—especially as left behind by the immense humanity of St. John of God, that inspired forerunner in the care of the mentally ill—we believe has been saved precisely through the process of critical revision of our being and our action which became unavoidable as soon as our dissatisfaction took shape.



In concluding this talk, we feel we have undertaken a journey which also involves those who, in both lay and professional life, deal with mankind when it becomes ill, suffers, and sees life's deepest meanings begin to waver. To bear witness to global attention to whoever grows ill and suffers in his own peculiar way has become the object of an investigation, virtually a command, which is identified in the phrase " the hospitality of the St. John of God Brothers heading towards the year 2000. " On the basis of this expression we have sought at every level to provoke the reflection of laity and religious on projects for humanization.

What is more, for us it is a sign of the times and of the value of our commitment to note that in Spain and Italy the phrase " humanization of medicine " has entered into the language of health policy.

We believe that our future, like that of medicine, cannot be detached from a better, more sincere relationship with the person to whom our action is directed.

Beyond all expressions of faith or political conviction, the hospital can become the laboratory generating the spiritual community of men dedicated to actively building human solidarity within and beyond illness. In the certainty that our way of providing care and practicing medicine will enable us, in the man who suffers, to preserve what is human and evoke the divine.

Fra PIERLUIGI MARCHESI
Prior General, Hospital Order of St. John of God

May I See Suffering Man in the Sick

Elio Toaff

An ancient rabbinic maxim states, " The best doctor deserves hell. " There has been much discussion about its meaning, appearing strange in a world like that of the Jews, which has always maintained a substantially positive relationship with medicine. The explanations proposed have been many and varied. For example, the eighteenth century rabbi and physician Isacco Lampronti from Ferrara, reflecting a polemic of his time, said that not all doctors in general are destined to go to hell, but only a particular group, surgeons. But beyond all interpretive nuances —as well as the possible ironies—the rabbinic maxim harbors an essential exigency. Taking up and adopting a popular saying, the rabbis became spokesmen for an unrenounceable moral demand. There are few sectors of human activity where, as in medicine, man is given the opportunity and power to intervene on the most perfect creature. The exercise of this enormous power is inevitably accompanied by the risk of offending man's dignity. It is thus necessary to associate technical capacity with moral conscience which will uprightly guide behavior in every choice, in the awareness of its seriousness. In the absence of this conscience, even for the best of health technicians, of physicians, the doors of hell are wide open.

The need to humanize medicine is, therefore, not a recent exigency in Jewish religious culture. The concepts of human solidarity, of mutual assistance, of compassion towards those suffering are constant components of the Biblical message. Rabbinic literature repeats and stresses these elements, placing the ill at the heart of divine attention. It is taught that one should not remain seated before the bed where a sick person lies, for over his head the *Shekhina*, or divine presence, rests. It is said that the doctor who approaches the patient to treat him is faced with a sharpened sword—at that moment he is regarded as a messenger of the Lord who must carry out his mission with the maximum attention. Over the centuries, the theoretical principles have been consistently applied in a complex set of norms on the duties, competence, and responsibilities of those caring for the sick. Religious commitment and juridical discipline, joined to awareness of the need for the highest level of technical training, have been the constant elements in Judaism of the concept of medical practice. It is clearly not an accident that for many centuries illustrious rabbis have practiced the medical profession alongside their religious magisterium.

It is with this long history behind it that Judaism today faces the new problems of medical ethics. As has been said, the demand for humanization is not new, but the—sometimes monstrous—dimensions with which problems are posed are new, as are the exceptional prospects for radical interference with the human structure. As for the first aspect of this newness, the Jews have unfortunately intervened directly as witnesses and victims of tragic recent history, in which they have had to experience in their own personhood offenses to human dignity, effected even in the name of " science. "

In the second aspect of this novel situation, Judaism intervenes in a universal debate in which it testifies to faithfulness to a tradition which it does not, however, seek to impose beyond its own confines. Precisely when we speak of humanization and respect for dignity, we must not forget the cultural diversity of others, which should be respected. There is a broad area of problems whose solution cannot be univocal, for the approach of each culture, whether lay or religious, is truly different. Within a religious world there are exigencies or specific conceptions which it may be unjust to export and generalize. We may offer a few examples. In current Jewish

law, there is a tendency to restrict the licitness of artificial insemination strictly to the marriage bond. In this choice the need for certainty regarding fatherhood and motherhood prevails—it is a fundamental requirement in the Jewish religious system, but it is not, however, asserted that such must be the case elsewhere. What is more, however controversial the question may be, outstanding contemporary rabbinic authorities consent to eugenic abortion, starting from the assumption of the incompleteness of human life before birth. It is well known that other religious systems maintain the opposite with determination and seek to impose their vision upon civil legislation. Such is the case regarding the commencement of life. And when does life end? According to Judaism, man dies when his heart stops beating; it follows that to remove a beating heart, even in the presence of " brain death, " amounts to homicide. This is an essential objection to certain types of transplants. Clearly, it is a limit situation which we hope will be somehow resolved in the future. Does it make sense to impose this view outside of Judaism? It probably makes much more sense to ask the scientific community and legislators to watch over and respect cultural differences. We must thus be cautious, though prompted by sincere religious convictions, in not presenting our personal cultural choices as absolute requirements of " humanization. "

The real problem, then, is to identify what unites us rather than what divides us. If there is a large group of still-open, controversial questions even within each culture, there is also an essential framework of problems and demands concerning which we can—or, rather, we must—establish a common path. In this regard, our tradition feels it can make an important contribution. In what direction? An example is found in rabbinic discussion of the priority of values: " If a man is told to choose between transgression and death, let him transgress and not die. " This rule has, however, three significant exceptions, one of which is killing another human being. The Talmud narrates, " A powerful man had ordered someone to kill a person; if he failed to do so, he would pay with his own life. Under this threat, he turned to a Master for advice and received this reply: ' What makes you think your blood is redder than his? ' " (Talmud Bab., *Sanhedrin* 74r); that is, metaphors aside, your life is worth as much as his, and you have no right to suppress it. This principle, according to the Talmud, involves elementary logic; but on careful reflection it is evident that the deduction is logical only when it is assumed *a priori* that " my blood is red like yours, " i.e., that all lives have the same value, which is not at all automatic or taken for granted, at least in the light of the history of different cultures. For Judaism, however, it is. Now if we too are to establish once again—as a religious community in relation to humanity—a scale of values and choices, this essential point proposed by Judaism, though perhaps not obvious to all, is certainly necessary and indispensable.

The point of departure is thus a fundamental commitment to respect life, accompanied by a conception of science as an instrument for approaching the sacred. As Rav Kook, a great Jewish mystic of our time, stated in *Orot ha Godesh* (II, p. 412), " A science which progresses and renews itself by profane ways approaches the center of holiness. " With these presuppositions the Jewish doctor must approach the patient. And I would thus like to close with a final quote, from the so-called " prayer of Maimonides. " The text was not written by the famous rabbi-physician; it was in fact composed in the eighteenth century. But this in no way diminishes the message's validity, which one phrase makes evident: " O Lord, make me see in the patient only suffering man. "

Prof. ELIO TOAFF
Chief Rabbi of the Jewish Community in Rome

The Importance and Nobility of Medicine

Mohammed Kamel El Wassi

I shall begin my brief talk by reading a verse from the Koran, in the name of God the Clement and Merciful: " It is true—We created man from the purest clay and then made him into a drop of sperm in a safe place. We then transformed the drop of sperm into a soft mass, and the soft mass into bones. We clothed the bones with flesh and finally developed the whole into a new creature, bringing him into the light. May God be blessed " (S. XXII, 12-14).

This emphasizes the great dignity of man as created by God. Medicine is one of the noblest, most highly honored professions—or, rather, missions—in the world. It aims to alleviate the suffering and agony of men. The physician's essential task is to be the friend closest to the patient, who anxiously asks him for the most appropriate, up-to-date treatment. This is often the fruit of prolonged, exhausting research which has involved or demanded outright the sacrifices and lives of generous scientists. Only through their constancy and iron will have they come to discover the secrets of diseases and perfect methods to fight against microbes, bacteria, viruses, and chemical substances.

The human organism is a complex of integrated processes involving vegetable, animal, and spiritual life, and only if we bear in mind these processes as a whole can we comprehend and defend this organism. Many evils could be avoided if natural law and moral norms were respected. Unfortunately, the world, which has completed marvelous stages in the field of science and technology, today finds itself to be impoverished and incapacitated in that of ethical and moral principles.

The terrible clash of interests taking place in human society is only a pale reflection of the long-familiar, sad struggle for existence. We are lamentably witnessing hunger in many countries and observing that numberless young people turn to drugs.

It is a civic and social duty to search for all possible initiatives to diminish the number and grave consequences of these catastrophes. Religions are also called to make their contribution in this regard. Islam, like all the others, does not limit itself to organizing rites and prayers, but is concerned with and points out the principles and laws of human wellbeing. Many conferences and meetings have been convened to affirm man's dignity and inalienable rights.

Let us briefly consider a few

examples. Islam severely condemns intentional abortion, euthanasia, and artificial insemination. I shall cite only these few instances to demonstrate that Islam agrees with other religions in showing concern for this scientific, juridical, and distinctly human discipline.

The humanization of medicine, in short, means making more humane the mission which, in and of itself, has always been the most humane and noble ever since the world began. A mission so sacred and noble that majority opinion concerning its origin in history feels that the human mind is incapable of attaining its secrets and that God Himself has inspired man with them since the creation of Adam.

I take this propitious occasion to express my deep gratitude for the invitation to participate in this International Conference and convey the most sincere best wishes of the Egyptian physicians, especially of the Moslem and Christian colleagues providing their valuable service together with numerous Combonian Sisters at the Italian Hospital in Cairo to aid suffering mankind with no discrimination based on race, color, or religion.

Prof. MOHAMMED KAMEL EL WASSI
Director of the Italian Hospital in Cairo, Egypt

Christian Perspective on the Humanization of Medicine

Eric Ram

Introduction

The Christian Church historically has problably had greater involvement in health care than any other institution. It can take pride in pioneering medical care in many countries around the world. This is not only because its founder provided a mission for healing, but also because there has always been an intimate relationship between man's religious beliefs and his concern for health.

During the Middle Ages there seems to have been much more concern for the soul than for the body. No surgery was practised because the human body was created in the image of God and to incise it was regarded as sacrilege. Religious orders created *Hospitia*, which were constructed adjacent to monasteries, providing food and temporary shelter for weary travellers and pilgrims. The Hospital movement grew more rapidly during the Crusades, which began in 1096. The impetus for this probably came from a sense of self-preservation, for the Crusaders died more from pestilence and disease than from the swords of the Saracens. As a result, military hospitals sprang up to accommodate the sick and exhausted Crusaders along their travelled roads. One body of Crusaders organized the Order of St. John, which established a 2000-bed hospital in Palestine in the year 1099. This Order has persisted to this day. In the 12th century there was a great surge in the establishment of hospitals in England. The great number of hospitals now directly related to the Church are the result of missionary activity, much of which began in the early part of the 19th century. This continued to grow and by the turn of the 20th century, many thousands of hospitals, clinics, and dispensaries were established by both Protestant and Catholic churches.

Progressive Modernization of Medicine

Early practitioners of the healing arts understood man as a whole being whose body and soul were not separate, and all symptoms of disease affected the whole person. A deep change occurred in the 19th century when medicine allied itself with the natural sciences. Increasingly, the physicians and surgeons became competent craftsmen, exploring the body in order to treat and repair it.

By the second half of the 20th century, relatively simple infectious and parasitic diseases were no longer a major threat in industrialized countries. Advances in the basic medical sciences and in technology have led to rapid growth in diagnostic, therapeutic, and rehabilitative methodologies. As a result, modern medicine today is able to transplant organs, replace joints, and prolong life. In the process, however, the close relationship between doctor and patient gave way to depersonalized, sophisticated technology which, at least initially, made the hospital the exclusive workshop of the modern physicians.

There doesn't really seem to be a place in modern medicine for death and dying. They are somehow regarded as a sign of failure, and doctors and nurses find it difficult to relate to patients at this stage. The logical result of the scientific approach to medicine would be the banishment of death. And with such a superhuman goal, the failure to accomplish it can lead to feelings of guilt.

Medicine is being treated like industry. The shareholders of the medical-industrial complex have tended to regard health as a commodity. Yet the patients do not receive the kind of information necessary to enable them to choose between various health care providers. We seem to have traded the caring and loving functions of the traditional family physician for a dehumanized and often mis-

used technology delivered at the convenience of medical care providers.

Human Relations in Healing

We have seen over the past several decades that in spite of all the advancements in medical technology, certain fundamental sicknesses of today's society arise out of our sense of isolation and loneliness. They have not been solved because the best of machines in the best of institutions are not capable of listening, caring, touching, and loving. These are human attributes. It is this dimension of relationships that is so important in healing. Paul Tournier called it the " third dimension of medicine. " The early Christian hospitals in Europe began with a history of *caring* more than of *curing*. These hospitals were established principally for those considered beyond cure, the hopeless cases abandoned by society. Then, as medicine to conquer disease gradually developed, the Church and its hospitals began to identify with the curing model, and persons in both medicine and ministry took on the therapeutic self-image. Caring involves one's entire being — sharing oneself with others. It is the process by which we relate to each other. It requires humility, a continuous learning about the other person while respecting his or her dignity.

Our dependency on modern technology has increased so much that we are forgetting the human values in healing. Reconciliation, hope, and compassion have a key role to play in the healing process. How do we re-integrate these important healing ingredients into our medical care?

Self-Worth and Healing

A silent, deadly phenomenon is taking place in welfare society today. People are losing their self-worth as they look to the State to provide everything for them — including their health. The sense of loneliness

and isolation is growing every day. How do we empower people for their own health? One essential element lies in self-care, and the other, in their participation in decision-making which affects their health and life. Patients are people and cannot be treated as objects. They must be active and equal members of a healing partnership. This is one of the best ways to humanize medicine.

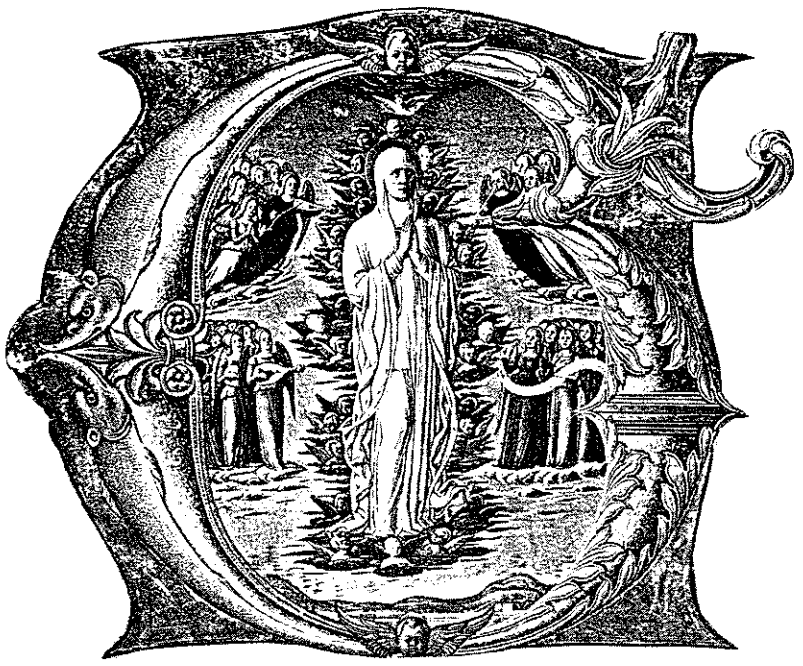
Equity in Health Care

The question of humanizing medicine does not arise where there is no medicine. And, what is the value of medicine which profits only a small portion of our world?

I was in the southern part of Sudan not too long ago, where I travelled by one-engine planes, landrovers, hand-dug canoes, and on foot to a number of villages. There people told me that many from the time they are born till the time they die do not receive one tablet of aspirin or chloroquine. This, in itself, is perhaps not a negative indication. But Sudan is one of the most malaria-infested countries in the world. In certain other developing countries, too, a new-born child still has only a fifty-fifty chance of survival. The death rate at child birth is 500 times higher than in industrialized countries. Malnutrition is more a rule than an exception for two-thirds of the world's population, and four-fifth's of the world population are beyond the reach of any permanent form of health care. Nearly 17 million children under the age of five die annually. Over five million children die of malaria each year in Africa alone. The tragedy is that 85% of all these deaths could be prevented.

Despite the " magic " of modern medicine and daily pronouncements of major breakthroughs in medical and health technologies, the most basic health needs of the majority of the world's people are not met even in a rudimentary manner. Lack of the simplest forms of health care is resulting in high rates of morbidity and mortality from preventable diseases. The present conventional medical care system, patterned after Western medical models, has proven to be very inappropriate and far too expensive to meet the basic needs of the majority of the world's people,

particulary in developing countries. The problem of inaccessibility of health services, in fact, is the question of unequal distribution and lopsided control of what is available. Health care is becoming increasingly expensive and complex and, to a large extent, has lost its social relevance, as it is available mostly to the privileged few with social and economic power. The problem goes beyond the question of access to the health system. The system itself is a problem. In most cases it is not a health system but a disease system. Eighty to eighty-five percent of the illnesses in our communities are preventable, but less than ten percent of the health budgets go for prevention.



Training of Doctors and Nurses

Recently, a young graduate from a European medical school mentioned in the course of our discussion regarding medical education that his first patient was a dead patient (cadaver). He carefully dissected and studied this first case. Should we not think of training our young graduates with living patients, in the communities? Medical colleges train medical students today, in which the " best health care " is assumed to be that by which everything known to medicine is applied to every individual, by the most highly trained medical scientists, in the most specialized institutions. It has been seen, however, that the " quality " service provided on this assumption moves health interventions further up the professional ladder, and medical service becomes rather insensitive to the health needs and the problems of the community. Medicine has developed independently of the needs of the masses, especially the needs of the poor masses.

If our medical graduates and nurses are to serve the poorest of the poor in keeping with the command of our Lord, they have to be trained and equipped with necessary skills in the strategy of primary health care. Their training must be based in the community, allowing them to learn about and from the community and how best to serve it. Their teachers in medical colleges and schools must also learn and adopt new approaches to education. Many of our medical colleges still prepare their students to conform to rather obscure, elevated, and allegedly " academic " standards, largely ignoring the pressing health needs of our developing countries, today and tomorrow.

Integrated Approach

There was a time when people used to think that more doctors and more hospitals would result in better health. That concept is now changing. Throughout the world the problems of ill health are strongly related to, and dependent on, factors such as poverty, poor housing, poor environment, lack of safe drinking water, lack of food, malnutrition and undernutrition, high fertility rates, illiteracy, unemployment and low-income, land tenure, inaccessibility of social services, etc. It is not enough, for example, to disseminate health and nutrition education if land tenure and utilization preclude the production of adequate food for local consumption. It is futile to promote group health insurance schemes if employment opportunities are limited and participation is beyond the reach of many. Pro-

vision of clean water sources in a community will have impact on water-borne diseases only insofar as the community is educated in their use and management.

Evolving Concept of Health and Healing

We have learnt that health is more than absence of disease. It is seen as a harmonious and balanced relationship of the physical, mental, spiritual, economic, and social well-being of a person, in harmony with the natural environment and with God. In biblical terms, this is known as *shalom*, a state of right relationships. We have learned that it is very important to have a right relationship between the person and members of his/her family, a right relationship between the person and members of his/her community, a right relationship between the person and God, the right relationship between the person and nature. A disturbance in any one of these can cause ill health. Reconciliation and hope are key elements and play an important role in the healing process. We have learned that there is a partnership involving body, mind, and spirit and that they are inseparable. What happens to one part affects the other. Thus, the concept of the wholeness approach in health care.

We have now entered the era of primary health care, where health and development will play inseparable and complementary roles. This means that our hospitals and church-related institutions will need to make certain changes in thinking and action as we plan the future health services of our communities and of our countries. It also means that dioceses and churches must also assume responsibility for primary health care as a strategy to make health available to everyone, especially the poor and needy. The question of humanizing medicine becomes moot if medicine does not exist!

We must focus on the needs of the community rather than professional interests and treat the entire community as a patient in order for health services to be more relevant to present and future needs.

Conclusion

I wish to propose a number of urgent questions for our common consideration:

- Is the *prolongation* of life at any cost the main task of medicine, without regard for the *quality* of life?
- Does the structure of modern medicine allow for generating love, care, compassion, and human sympathy — so necessary to healing?
- Is modern medicine willing and able to function outside the hospital walls to meet the health needs of the masses?

In conclusion, it is not enough to say that medicine must be humanized.

The main question for the Church is, " What is it that we, as health professionals, patients, church leaders, lay persons, and politicians, should look for in medicine? " The Church has to challenge contemporary idols and false expectations. It has to think through and act in shaping the healing ministry of the Church in the image of its founder, the wounded healer, our Lord Jesus Christ.

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Suggested Readings

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