



13 November 2000

**Address to the Plenary Session on  
'Science and the Future of Mankind'**

*The Pope reflects upon the 'ethical responsibility of scientific research because of its consequences for man'. There is a humanistic dimension to science, not least because each researcher forms a part of his own research project. 'Truth, freedom and responsibility are connected in the experience of the scientist' and he has a 'duty to serve more fully the whole of mankind'. Carried out in this way, science encounters the Church in a 'fruitful dialogue'. Scientific progress must also be human progress and to be such it must be based on 'the conditions of charity and service'.*

Mr. President,

Distinguished Ladies and Gentlemen,

1. With joy I extend to you my cordial greetings on the occasion of the plenary session of your Academy, which, given the Jubilee context in which it is taking place, takes on special significance and value. I would like, first of all, to thank your President, Professor Nicola Cabibbo, for the kind words that he addressed to me on behalf of you all. I extend my keenly felt expression of thanks to you all for this meeting and for the expert and valued contribution which you offer to the progress of scientific knowledge for the good of humanity.

Continuing, and almost completing, your deliberations of last year, you have dwelt over the last few days on the stimulating subject of 'science and the future of mankind'. I am happy to observe that in recent years your study weeks and plenary assemblies have been dedicated in an increasingly explicit way to investigating that dimension of science which we could define as anthropological or humanistic. This important aspect of scientific research was also addressed on the occasion of the Jubilee of Scientists, celebrated in May, and, more recently, on the occasion of the Jubilee of University Teachers. I hope and wish that reflection on the anthropological contents of knowledge and the necessary rigour of scientific research can be developed in a meaningful way, thereby offering illuminating indications for the overall progress of man and society.

2. When one speaks about the humanistic dimension of science, thought is directed for the most part to the ethical responsibility of scientific research because of its consequences for man. The problem is real and has given rise to constant concern on the part of the Magisterium of the Church, especially during the second part of the twentieth century. But it is clear that it would be reductive to limit reflection on the humanistic dimension of science to a mere reference to this concern. This could even lead some people to fear that a kind of 'humanistic control of science' is being envisaged, almost as though, on the assumption that there is a dialectical tension between these two spheres of knowledge, it was the task of the humanistic disciplines to guide and orientate in an external way the aspirations and the results of the natural sciences, directed as they are towards the planning of ever new research and extending its practical application.

From another point of view, analysis of the anthropological dimension of science raises above all else a precise set of epistemological questions and issues. That is to say, one wants to emphasise that the observer is always involved in the object that is observed. This is true not only in research into the extremely small, where the limits to knowledge due to this close involvement have been evident and have been discussed philosophically for a long time, but also in the most recent research into the extremely large, where the particular philosophical approach adopted by the scientist can influence in a significant way the description of the cosmos, when questions spring forth about everything, about the origins and the meaning of the universe itself.

At a more general level, as the history of science demonstrates to us rather well, both the formulation of a theory and the instinctive perception which has guided many discoveries often reveal themselves to be conditioned by philosophical, aesthetic and at times even religious and existential prior understandings which were already present in the subject. But in relation to these questions as well, the analysis of the anthropological dimension or the humanistic value of science bears upon only a specific aspect, within the more general epistemological question of the relationship between the subject and the object.

Lastly, reference is made to 'humanism in science' or 'scientific humanism' in order to emphasise the importance of an integrated and complete culture capable of overcoming the separation of the humanistic disciplines and the experimental/scientific disciplines. If this separation is certainly advantageous at the

analytical and methodological stage of any given research, it is rather less justified and not without dangers at the stage of synthesis, when the subject asks himself about the deepest motivations of his 'doing research' and about the 'human' consequences of the newly acquired knowledge, both at a personal level and at a collective and social level.

**3.** But beyond these questions and issues, to speak about the humanistic dimension of science involves bringing to the fore an 'inner' or 'existential' aspect, so to speak, which profoundly involves the researcher and deserves special attention. When I spoke some years ago at UNESCO, I had the opportunity to recall that culture, and thus also scientific culture, possesses in the first instance a value which is 'contained within the subject itself'.<sup>1</sup> Every scientist, through personal study and research, completes himself and his own humanity. You are authoritative witnesses to this. Each one of you, indeed, thinking of his own life and his own experience, could say that research has constructed and in a certain way has marked his personality. Scientific research constitutes for you, as it does for many, the way for the personal encounter with truth, and perhaps the privileged place for the encounter itself with God, the Creator of heaven and earth. Seen from this point of view, science shines forth in all its value as a good capable of motivating an existence, as a great experience of freedom for truth, as a fundamental work of service. Through it, each researcher feels that he is able himself to grow, and to help others to grow, in humanity.

*Truth, freedom and responsibility are connected in the experience of the scientist.* In setting out on his path of research, he understands that he must tread not only with the impartiality required by the objectivity of his method but also with the intellectual honesty, the responsibility, and I would say with a kind of 'reverence', which befit the human spirit in its drawing near to truth. For the scientist, to understand in an ever better way the particular reality of man in relation to the biological#physical processes of nature, to discover always new aspects of the cosmos, to know more about the location and the distribution of resources, the social and environmental dynamics, and the logic of progress and development, becomes translated into a duty *to serve more fully the whole of mankind*, to which he belongs. For this reason, the ethical and moral responsibilities connected to scientific research can be perceived as a requirement within science, because it is a fully human activity, but not as control, or worse, as an imposition which comes from outside. The man of science knows perfectly, from the point of view of his knowledge, that truth cannot be subject to negotiation, cannot be obscured or abandoned to free conventions or agreements between groups of power, societies, or States. Therefore, because of the ideal of service to truth, he feels a special responsibility in relation to the advancement of mankind, not understood in generic or ideal terms, but as the advancement of the whole man and of everything that is authentically human.

**4.** Science conceived in this way can encounter the Church without difficulty and engage in a fruitful dialogue with her, because it is precisely man who is 'the primary and fundamental way for the Church'.<sup>2</sup> Science can then look with interest to biblical Revelation which unveils the ultimate meaning of the dignity of man, who is created in the image of God. It can above all meet Christ, the Son of God, the Word made flesh, the perfect Man. Man, when following him, also becomes more human.<sup>3</sup>

Is it not perhaps this centrality of Christ that the Church is celebrating in the Great Jubilee of the Year 2000? In upholding the uniqueness and centrality of God made Man, the Church feels that she is given a great responsibility – that of proposing divine Revelation, which, without in any way rejecting 'what is true and holy' in the various religions of mankind,<sup>4</sup> indicates Christ, 'the way, the truth, and the life',<sup>5</sup> as the mystery in which everything finds fullness and completion.

In Christ, the centre and culmination of history,<sup>6</sup> is also contained the norm for the future of mankind. In Him, the Church recognises the ultimate conditions allowing scientific progress to be also real human progress. They are the conditions of charity and service, those which ensure that all men have an authentically human life, capable of rising up to the Absolute, opening up not only to the wonders of nature but also to the mystery of God.

**5.** Distinguished Ladies and Gentlemen! In presenting you with these reflections on the anthropological contents and the humanistic dimension of scientific activity, it is my heartfelt desire that the discussions and investigations of these days will produce much fruit for your academic and scientific endeavour. My hope and wish is that you can contribute, with wisdom and love, to the cultural and spiritual growth of peoples.

To this end, I invoke upon you the light and the strength of the Lord Jesus, real God and real Man, in whom are united the rigour of truth and the reasons of life. I am pleased to assure you of my prayers for you and your work, and I impart upon each of you my Apostolic Blessing, which I willingly extend to all those you hold dear.

1 Cf. *Insegnamenti*, III/1 (1980), pp. 1639#1640.

2 *Redemptor Hominis*, n. 14.

3 Cf. *Gaudium et Spes*, n. 41.

4 Cf. *Nostra Aetate*, n. 2.

5 *Jn* 14:6.

6 Cf. *Tertio Millennio Adveniente*, nn. 9-10.