



Address for the Commemoration of Albert Einstein



John Paul II pays tribute to the memory of Einstein and declares that the 'search for truth is the task of basic science', asserting that this must be carried out in freedom. The applications of science provide great benefits to humanity but must be 'united with conscience'. The Pope then calls for a study of the Galileo case after expressing regret at how the great scientist had been treated by the Church; he also observes that Galileo had believed that 'the two truths, of faith and science, can never contradict each other'. John Paul II stresses that the Academy is made up of believing and non-believing scientists and repeats that the universal Church 'attaches great importance to the function of the Pontifical Academy of Sciences'.

Venerable Brothers, Your Excellencies, Ladies and Gentlemen,

1. I thank you heartily, Mr. President, for the warm and fervent words you addressed to me at the beginning of your address. And I rejoice also with Your Excellency, as with Mr. Dirac and Mr. Weisskopf, both illustrious members of the Pontifical Academy of Sciences, in this solemn commemoration of the centenary of the birth of Albert Einstein.

The Apostolic See also wishes to pay to Albert Einstein the tribute due to him for the eminent contribution he made to the progress of science, that is, to knowledge of the truth present in the mystery of the universe.

I feel in full solidarity with my predecessor Pius XI and with those who succeeded him in Peter's See, in calling upon members of the Pontifical Academy of Sciences, and all scientists with them, to bring about 'the progress of sciences more and more nobly and intensely without asking anything else of them; and that because the mission of serving truth, with which we charge them, consists in this excellent intention and in this noble labour'.¹

2. The search for truth is the task of basic science. The researcher who moves on this first aspect of sciences feels all the fascination of St. Augustine's words: 'Intellectum valde ama',² 'he loves intelligence' and the function that is characteristic of it, to know truth. Pure science is a good which all people must be able to cultivate in full freedom from all forms of international slavery or intellectual colonialism.

Basic research must be free with regard to political and economic authorities, which must cooperate in its development, without hampering it in its creativity or harnessing it to serve their own purposes. Like any other truth, scientific truth is, in fact, answerable only to itself and to the supreme Truth, God, the creator of man and of all things.

3. In its other aspect, science turns to practical applications, which find their full development in the various technologies. In the phase of its concrete achievements, science is necessary to mankind to satisfy the rightful requirements of life, and to overcome the different ills that threaten it. There is no doubt that applied science has rendered and will continue to render immense services to man, provided it is inspired by love, regulated by wisdom, and accompanied by the courage that defends it against the undue interference of all tyrannical powers. Applied science must be united with conscience, so that, in the trinomial, science-technology-conscience, it is the cause of man's real good that is served.

4. Unfortunately, as I had occasion to say in my Encyclical *Redemptor Hominis*, 'The man of today seems ever to be under threat from what he produces ... This seems to make up the main chapter of the drama of present-day human existence'.³ Man must emerge victorious from this drama which threatens to degenerate into a tragedy, and he must find again his true kingship over the world and his full dominion over the things he produces. At the present time, as I wrote in the same Encyclical, 'The essential meaning of this "kingship" and "dominion" of man over the visible world, which the Creator himself gave man for his task, consists in the priority of ethics over technology, in the primacy of the person over things, and the superiority of spirit over matter'.⁴ This threefold superiority is maintained to the extent to which the sense of the transcendence of man over the world and of God over man, is preserved. Exercising her mission of guardian and advocate of both transcendences, the Church considers she is helping science to keep its ideal purity in the aspect of basic research, and to carry out its service of man in the aspect of its practical applications.

5. The Church willingly recognises, moreover, that she has benefited from science. What the Council said about certain aspects of modern culture must be attributed to it, among others: 'As regards religion there is a completely new atmosphere that conditions its practice. People are taking a hard look at all magical world-views and prevailing superstitions and demanding a more personal and active commitment to faith, so that not a few have achieved a lively sense of the divine'.⁵

The collaboration between religion and modern science is to the advantage of both, without violating their respective autonomy in any way. Just as religion demands religious freedom, so

science rightly claims freedom of research. The Second Vatican Council, after reaffirming, with the First Vatican Council, the rightful freedom of the arts and of human disciplines in the field of their own principles and their own method, solemnly recognises 'the legitimate autonomy of culture and especially of the sciences'.⁶ On the occasion of this solemn commemoration of Einstein, I would like to confirm again the declarations of the Council on the autonomy of science in its function of research on the truth inscribed in creation by the finger of God. The Church, filled with admiration for the genius of the great scientist in whom the imprint of the creative Spirit is revealed, without intervening in any way with a judgment which it does not fall upon her to pass on the doctrine concerning the great systems of the universe, proposes the latter, however, to the reflection of theologians to discover the harmony existing between scientific truth and revealed truth.

6. Mr. President! You said, very rightly, in your address that Galileo and Einstein characterised an era. The greatness of Galileo is known to everyone, like that of Einstein; but unlike the latter, whom we are honouring today before the College of Cardinals in the apostolic palace, the former had to suffer a great deal – we cannot conceal the fact – at the hands of men and organisms of the Church. The Vatican Council recognised and deplored certain unwarranted interventions: 'We cannot but deplore' – it is written in number 36 of the conciliar Constitution *Gaudium et Spes* – 'certain attitudes (not unknown among Christians) deriving from a shortsighted view of the rightful autonomy of science: they have occasioned conflict and controversy and have misled many into thinking that faith and science are opposed'. The reference to Galileo is clearly expressed in the note to this text, which cites the volume *Vita e opere di Galileo Galilei* by Msgr. Pio Paschini, published by the Pontifical Academy of Sciences.

To go beyond this stand taken by the Council, I hope that theologians, scholars and historians, animated by a spirit of sincere collaboration, will study the Galileo case more deeply and, in loyal recognition of wrongs from whatever side they come, will dispel the mistrust that still opposes, in many minds, a fruitful concord between science and faith, between the Church and the world. I give all my support to this task, which will be able to honour the truth of faith and of science and open the door to future collaboration.

7. Allow me, Gentlemen, to submit to your attention and your reflection some points that seem to me important to set again in its true light the Galileo affair. For in this affair the agreements between religion and science were more numerous and above all more important than the incomprehensions which led to the bitter and painful conflict that continued in the course of the following centuries.

He who is rightly called the founder of modern physics, declared explicitly that the two truths, of faith and of science, can never contradict each other, 'Holy Scripture and nature proceeding equally from the divine Word, the former dictated, as it were, by the Holy Spirit, the latter as a very faithful executor of God's orders', as he wrote in his letter to Father Benedetto Castelli on 21 December 1613.⁷ The Second Vatican Council does not express itself otherwise: it even takes up again similar expressions when it teaches: 'Methodical research in all branches of knowledge, provided it is carried out in a truly scientific manner and does not override moral laws, can never

conflict with the faith, because the things of the world and the things of faith derive from the same God'.⁸

Galileo feels in his scientific research the presence of the Creator, who stimulates him, inspires and helps his intuitions, acting in the deepest recesses of his spirit. In connection with the invention of the telescope, he writes at the beginning of *Sidereus Nuncius*, recalling some of his astronomical discoveries: '*Quae omnia ope Perspicilli a me excogitati divina prius illuminante gratia, paucis abhinc diebus reperta, atque observata fuerunt*'.⁹ 'All that has been discovered and observed in the last few days thanks to the 'telescope' that I have invented, after having been enlightened by divine grace'.

Galileo's confession of divine illumination in the mind of the scientist finds an echo in the text already quoted of the conciliar constitution on the Church in the modern world: 'The humble and persevering investigator of the secrets of nature is being led, as it were, by the hand of God in spite of himself'.¹⁰

The humility which the conciliar text stresses is a virtue of the spirit necessary for scientific research as well as for adherence to faith. Humility creates a climate favourable to the dialogue between the believer and the scientist; it calls for the illumination of God, already known or still unknown but loved in both cases by him who humbly seeks the truth.

8. Galileo formulated important norms of an epistemological character, which are indispensable to reconcile Holy Scripture and science. In his letter to the grand-duchess mother of Tuscany, Christine of Lorraine, he reaffirms the truth of the Scriptures: 'Holy Scripture can never lie, provided, however, that its real meaning is understood. The latter – I do not think it can be denied – is often hidden and very different from what the mere sense of the words seems to indicate'.¹¹ Galileo introduces the principle of an interpretation of the sacred books which goes beyond the literal meaning but is in conformity with the intention and the type of exposition characteristic of them. It is necessary, as he affirms, that 'the wise men who expound it should show its real meaning'.

The ecclesiastical Magisterium admits the plurality of the rules for the interpretation of Holy Scripture. It teaches expressly in fact, with Pius XII's Encyclical *Divino Afflante Spiritu*, the presence of different literary styles in the sacred books and therefore the necessity of interpretations in conformity with the character of each of them.

The various agreements that I have mentioned do not in themselves solve all the problems of the Galileo affair, but they contribute to creating a starting point favourable to their honourable solution, a state of mind propitious to the honest and loyal solution of old oppositions.

The existence of this Pontifical Academy of Sciences, with which Galileo was associated in a certain way through the old institution which preceded the present one, to which eminent scientists belong today, is a visible sign which manifests, without any form of racial or religious discrimination, the deep harmony that can exist between the truths of science and the truths of faith.

9. In addition to the foundation of your Pontifical Academy by Pius XI, my predecessor John XXIII

wished the Church to continue to promote scientific progress and to reward it by establishing the Pius XI Gold Medal. In conformity with the choice made by the Council of the Academy, I am happy to confer this high distinction on a young researcher, Dr. Antonio Paes de Carvalho, whose basic research works have made an important contribution to the progress of science and the good of mankind.

10. Mr. President and Members of the Academy, before the Lord Cardinals present here, the Diplomatic Corps accredited to the Holy See, the illustrious scientists and all the personalities attending this academic session, I would like to declare that the universal Church, the Church of Rome united with all those in the world, attaches great importance to the function of the Pontifical Academy of Sciences.

The title 'Pontifical' attributed to this Academy signifies, as you know, the interest and support of the Church. These are manifested in very different forms, of course, from those of ancient patronage, but they are no less deep and effective. As the distinguished President of your Academy, the late Msgr. Lemaître, wrote: 'Does the Church need science? Certainly not, the cross and the gospel are sufficient for her. But nothing human is alien to the Christian. How could the Church have failed to take an interest in the most noble of the strictly human occupations: the search for truth?'.¹²

In this Academy which is yours and mine, believing and non-believing scientists collaborate, concurring in the search for scientific truth and in respect for the beliefs of others. Allow me to quote here again an enlightening passage by Msgr. Lemaître: 'Both of them, (the believing scientist and the non-believing scientist) endeavour to decipher the palimpsest of nature, in which the traces of the various stages of the long evolution of the world are overlaid on one another and confused. The believer has perhaps the advantage of knowing that the enigma has a solution, that the underlying writing is, when all is said and done, the work of an intelligent being, therefore that the problem raised by nature has been raised in order to be solved, and that its difficulty is doubtless proportionate to the present or future capacity of mankind. That will not give him, perhaps, new resources in his investigation, but it will contribute to maintaining in him a healthy optimism without which a sustained effort cannot be kept up for long'.¹³

I wish you all this healthy optimism of which Msgr. Lemaître speaks, an optimism which draws its mysterious but real origin from God, in whom you have put your faith, or from the unknown God to whom the truth, which is the object of your enlightened researches, is directed.

May the science that you profess, Members of the Academy and scientists, in the field of pure research as in that of applied research, help mankind, with the support of religion and in agreement with it, to find again the way to hope and to reach the ultimate aim of peace and faith!

1 Pius XI, *In Multis Solaciis*, 28 Oct. 1936: AAS 28 (1936), p. 424.

2 *Epist.* 120, 3, 13; *PL* 33, 459.

3 John Paul II, *Redemptor Hominis*, n. 15.

4 *Ibid.*, 16.

5 *Gaudium et Spes*, n. 7.

6 *Ibid.*, n. 59.

7 *Opere*, vol. V (Florence, G. Barbèra 1968), pp. 282-285.

8 *Gaudium et Spes*, n. 36.

9 Galilei, *Sidereus Nuncius*, Venetiis, apud Thomam Baglionum, MDCX, fol. 4.

10 *Gaudium et Spes*, n. 36.

11 *Opere, op. cit.*, vol. V, p. 315.

12 O. Godart and M. Heller, *Les relations entre la science et la foi chez Georges Lemaître*, Pontificia Academia Scientiarum, *Commentarii*, vol. III, 21, p. 7.

13 *Ibid.*, p. 11.