

CHRIST AND SCIENCE

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Jesus Christ is the most fascinating person who has ever existed. It is worth getting to know Him more than any other person, and no human discipline could ever find a better subject to study. However, science, or at least experimental science as we know it today, has not paid much attention to Him. Scientists throughout history have been very interested in God, to such a degree that, paradoxically, scientists may be considered to be more religious than other intellectuals. This was the case not only in the past but also today. Copernicus, Galileo and Newton were deeply religious men. But even Einstein, Max Planck and Kurt Gödel felt the need to speak about God, and more recently Stephen Hawking, Roger Penrose, Steven Weinberg and Lee Smolin have said a great deal more about God, and perhaps even to God, than many philosophers and theologians of our time.¹ The existence of God is an ever-present challenge, even for those who simply want to deny it: is the God-hypothesis necessary or not to explain the world scientifically? And if one admits that there is one eternal, omniscient God, how can this fit into the image of the world that science offers? It is difficult to escape these questions, once one attempts to see the world in terms which are broader than strictly empirical data.

Scientists and Jesus

While scientists have studied and reflected on God, this has not been the case with Jesus. The question of the historical Jesus who is believed by

¹ Cf. R. Timossi, *Dio e la scienza moderna. Il dilemma della prima mossa* (Mondadori, Milan, 1999).

Christians to be truly God and truly human does not seem to have found a place in scientific reflection.

There were numerous attempts in the course of the twentieth century to approach the figure of Jesus 'scientifically', above all in exegesis and the various biblical sciences. These disciplines set themselves the task of studying the person, actions and sayings of Jesus not from the point of view of traditional interpretation, inasmuch as this was considered too partial, but with a new, scientific, rational method, which approached the object being studied, in this case the figure of Jesus, from a neutral point of view. We owe to these disciplines significant progress in understanding the historical circumstances in which Jesus and the first Christian communities lived, as well as the origins of the first Christian writings. However, these approaches to the figure of Jesus, though they claimed to be scientific, were often heavily laden with preconceptions and *a priori* philosophical positions, which definitely compromised the objectivity of their results. 'Scientific' critical exegesis tended to be critical of everything but itself and lacked a sound epistemological foundation. The claim that this kind of approach made to being 'scientific' aroused strong objections, not only among researchers trained in the empirical sciences but also among those trained in the humanities.²

More recently, other scientific disciplines have attempted to subject the figure of Jesus to the proofs of science. I am thinking of studies carried out on objects and relics which were presumed to have had contact with Jesus, in particular the analyses and tests carried out on the Turin Shroud in 1978 and, more recently, in 1998.³ The results of some of these tests are still controversial and there was some criticism of the fact that they were carried out at all. Clearly, a scientific investigation carried out on these objects will never provide absolute proof that they belonged to Jesus, much less prove that He existed. On the other hand, it is also true that these relics of Jesus, despite being very important and worthy of veneration by Christians, are not an object of faith in the strict sense. However, such investigations can help to give support, on a rational basis, to the authenticity of certain relics or facts linked to the figure of Jesus. They can also help to identify and

² Cf. J. Ratzinger *et al.*, *Schriftauslegung im Widerstreit* (Herder (*Quaestiones disputatae* 117) Freiburg, 1989).

³ See, for example, E.M. Carreira, "La Sábana Santa desde el punto de vista de la Física" and J.P. Jackson, "La Sábana Santa ¿nos muestra la resurrección?" in *Biblia y Fe*, XXIV (1998).

avoid those that are false. Studies like these are always ultimately based on the desire to come to a rationally based knowledge of the case of Jesus, something which Christianity has always claimed to have as the *religio vera*. Faith has nothing to fear from reason,⁴ so science can never be a threat when it wants to investigate Jesus. Anyone who has visited the Holy Land will know that, next to every church or sanctuary, and often under them, there is an archaeological dig, which is an attempt, in that particular context, to verify rationally what has been handed down as part of tradition. One can only hope that such research will be extended to many more objects or facts that are said to be miraculous. In these cases, science can help faith to rid itself of the leftovers of superstition and find solid foundations for belief.⁵

Obviously, these investigations touch Jesus Christ only indirectly, even though, when they speak of the resurrection of Jesus, it is impossible not to ask oneself about Him. Nevertheless, the link between Christ and science and scientists is still largely unexplored. One important lacuna is that there is no serious study on what Christ means for scientists, a thorough treatment of the way scientists have contemplated Christ across the centuries, and how they have approached Him. Father Xavier Tilliette did such a thing for philosophers in his book *Le Christ de la philosophie*, the sub-title of which is quite significant: *Prolégomènes à une christologie philosophique*.⁶ The prolegomena for a similar 'scientific Christology' have still to be written.

Allow me to refer *en passant* to one very noteworthy attempt made in this area: Father Pierre Teilhard de Chardin's work entitled *Science and Christ*.⁷ It was only an attempt, and it may well have attracted some criticism, but it was a noble effort on the part of one of the twentieth century's great anthropologists to bring his scientific knowledge face to face with

⁴ John Paul II, 'Address to those who took part in the Jubilee of Men and Women from the World of Learning, 25 May 2000'.

⁵ 'Science can purify religion from error and superstition'. Cf. John Paul II, 'Letter to Father George V. Coyne, 1 June 1988'. The text is in Pontificium Consilium De Cultura, *Jubilee for Men and Women from the World of Learning* (Vatican City, 2000), p. 59.

⁶ X. Tilliette, S.J., *Le Christ de la philosophie* (Cerf, Paris, 1990). See the same author's *Le Christ des philosophes*, (Institut Catholique de Paris, Paris, 1974).

⁷ P. Teilhard de Chardin, 'Science et Christ', a conference held in Paris on 27 February 1927. It was published in *Science et Christ* (Œuvres de Teilhard de Chardin, IX, Paris, 1965), pp. 47-62. See also E. Borne, 'Teilhard de Chardin', in P. Poupard (ed.), *Grande Dizionario delle Religioni* (Piemme, Casale Monferrato, 3rd. edn., 2000), pp. 2125ff.

Christ. In his study of matter, this great Jesuit anthropologist perceived a strong urge to unification and synthesis, an excess of energy which enabled matter to transcend itself more and more. He saw this as evidence of a process which would culminate in Christ. Teilhard was obviously not so naïve as to try to deduce Christian doctrine from the simple study of the properties of matter. He wrote that science, left to itself, cannot discover Christ, but Christ fulfils the desires which arise in our hearts when we are at the school of Science.⁸ For Teilhard, Christ was so much a part of nature, as a unifying element, that he did not always acknowledge Christ's individuality. But at least he was looking in the right direction in his attempt to build a bridge between scientific research and the person of Christ.

Christianity recognises that Christ is the incarnate *Logos*. The divine *Logos* is the *Mind of the Universe*,⁹ to use the provocative expression Mariano Artigas borrowed from Seneca. With its affirmation that, in the beginning, there was the *Logos*, Christianity invests in the rationality of the universe rather than in chaos. It builds a bridge that links the intelligibility of nature – which is what makes science possible – with the designer of the universe. As a matter of fact, the rationality of nature is a necessary precondition for scientific activity. It is a hypothesis which cannot be proved scientifically, but it is, nonetheless, indispensable for the very existence of science. Far from dismissing this hypothesis, scientific progress seems to prove its substantial correctness and to broaden its significance.¹⁰ Paul Davies conceded that 'one cannot prove the world to be rational...Yet the success of science is at the very least strong circumstantial evidence in favour of the rationality of nature.'¹¹ The recovery of the concept of *Logos* applied analogously to Him who is hypostatically the *Logos*, and to its participation in created beings, is thus revealed as a rich and promising idea which ought to be further explored in order to link Christ with nature in a coherent and articulate way. To avoid confusion, this ought to be done with-

⁸ 'La Science, seule, ne peut découvrir le Christ, mais le Christ comble les vœux qui naissent dans notre cœur à l'école de la Science', in 'Science et Christ', p. 62.

⁹ M. Artigas, *The Mind of the Universe* (Templeton Foundation Press, Philadelphia-London, 2000), pp. xx ff. Seneca uses the expression in *Quaestiones Naturales* I, 13.

¹⁰ M. Artigas, 'Science et foi : nouvelles perspectives', in P. Poupard (ed.), *Après Galilée* (Desclee, Paris, 1994), p. 201. Cf. J. Ladrière, 'Scienza-Razionalità-Credenza', in P. Poupard (ed.), *Grande Dizionario delle Religioni* (Piemme, Casale Monferrato, 3rd edn., 2000), pp. 1942-1947.

¹¹ P. Davies, *The Mind of God: The Scientific Basis for a Rational World* (Simon & Schuster, New York & London, 1993), p. 191.

out turning Christ into some sort of soul of the universe and at the same time avoiding a radical separation where Christ has no place in nature.

The Science of Christ

I would like to approach the subject assigned to me in another way: by revisiting the mediaeval question known by the title *De Scientia Christi*, which refers to Christ's knowledge, the sort of knowledge Christ himself had. I realise this terminology may appear bizarre and far removed from the kinds of questions people like yourselves face every day in your work. I am well aware of the risk involved, but I would still like to make a tentative incursion into the rich mystery which is the person of Christ, and to draw out what is relevant to the ever-present question of the links between science and faith.

For the Christian Faith, Christ, who is God incarnate, is truly God and truly human. As such, he possesses the fullness of divine nature and of human nature, each with its respective properties. As far as knowledge is concerned, this means that, as God, Christ had a knowledge of reality which was divine, in other words perfect, infinite and all-embracing. At the same time, as a human being he had a mode of knowing which was human, and therefore limited, susceptible to experience and change. In the Middle Ages, people's approach to this question was not driven by an interest in history or by a preoccupation with studying the parts of the Bible which addressed this subject. They had a strictly speculative approach to what they saw as a philosophical problem. For them it was more a sort of *Gedankenexperiment*, a mental exercise, but one whose point of departure was a datum of faith: the historical person of Jesus of Nazareth, a first-century Jew, whom they believed to be both divine and human. If we align ourselves with that perspective, either by accepting the hypothesis that there existed such a being with both the mind of God and the brain of a human being, or because we believe in Him, the question of Christ's knowledge – *scientia Christi* – puts before us a vast range of unresolved questions: the possibility of infinite and perfect knowledge, the limits of human knowledge, the incarnation of that sort of divine intelligence within the limits of the ontological horizon of the finite. These are all variants, perhaps extreme ones in some cases, of the modern question *par excellence*, the question of the essence of knowledge.

Inasmuch as He was the incarnate Word and God – “The Father and I are one” (*Jn* 10.30) – Jesus had an infinite divine intellect, which missed

no detail. But the idea of an infinite intellect capable of knowing infinite things has posed numerous problems, which were studied during the past century by Kurt Gödel in his incompleteness theorems. The first problem is to find out whether infinite things exist, or, in other words, whether there is something infinite which actually exists rather than a merely potential infinite. Knowledge of an actual infinite thing poses a further problem: if an intellect is able to know and comprehend something infinite, the very fact of comprehending it imposes a limit on it, since the knowledge would be a greater infinite thing than the infinite known – the universe. Then there is the whole question of whether the infinite holiness of God is compatible with infinite knowledge, one of whose objects would be evil.¹² These are but a few of the questions which arise from a consideration of the divine intellect. But they become even more difficult when one considers what happened in the Incarnation, when God decided to lower Himself and allow Himself to be enclosed within the narrow limits of a human nature (cf. *Phil* 2.5-11).

Jesus, who was known as the carpenter's son, was a man with a human intellect. He had a brain, with neuronal connections which allowed Him to think, to have ideas, to express emotions and to hazard guesses. But there is still the whole question of knowing what link there was between his divine capacity for knowing the world and his human intelligence with all its limits. The human element in Christ's knowledge is known in mediæval terminology as 'experimental knowledge', which He acquired throughout his life. The Gospels actually tell us that Jesus grew 'in wisdom, in stature, and in favour with God and men' (*Lk* 2.52). He was also painfully shocked by the lack of faith of the people from his home-town of Nazareth (*Mk* 6.6). But only someone who did not know everything and expected a different reaction would be capable of such amazement. The man Jesus did not know everything. He Himself admitted that He did not know anything about certain aspects of God's plan for saving the world: "as for that day and hour, nobody knows it, neither the angels of heaven, nor the Son, but the Father only" (*Mt* 24.36). That text encapsulates a problem which has always perplexed theologians: how can it be that Jesus, who was God and had infinite knowledge, and therefore could even know the future, said that He did not know the date of the end of the world? It

¹² See, for example, Saint Bonaventure's *Quaestiones disputatae de Scientia Christi*, in the recent edition by F. Martínez Fresneda, ITF (Murcia 1999), and the very interesting introduction by M. García Baró.

is his human, experimental knowledge, which also makes Him closer to us. The Jesus who is speaking here is the man who has learned from his teachers how to read the book of the Law and the book of Nature, both of which He turns out to know very well.

Jesus and the Science of his Time

Perhaps it is opportune at this point to make a few remarks about the kind of scientific knowledge Jesus had, or at least about his attitude to science. At first glance, Christ does not appear to think science is terribly important. In fact, He appears to see it as an obstacle to entering the Kingdom of heaven. He even says, "I bless you, Father, Lord of heaven and earth, for hiding these things from the learned and the clever and revealing them to mere children" (*Lk* 10.21). He deliberately picked his close associates from people who were not very well educated (*Acts* 4.13), and asked St. Paul to give up the arguments of persuasive reason (*1 Cor* 2.4). But it would be wrong to think that, in this way, he looked down on scientific research. In these cases he was emphasising the primacy of love and the superiority of that knowledge which comes from God, in order to topple human pride which always tries to take God's place through a Promethean urge. Jesus also taught the parable of the talents (*Mt* 25.14-30) to stimulate self-improvement in every aspect of our lives, which would include science. Whoever refused to learn would be like the lazy servant who hid his talent and was condemned for it by his master (verses 26-27). Christ never refuted the teachings of the Old Testament and the Wisdom Literature where the study of nature and of human values has an important role. The more human beings get to know nature, the more they will praise its Author (*Wis* 13.2-5). Besides, the man Jesus knew a certain amount about some phenomena in nature – albeit in a limited way and subject to the conditioning of the time when He lived. He grew up in a rural area, so it is obvious that there would be images taken from the natural world in his teachings. Jesus knew and spoke about the cycles of life, especially in agriculture. He knew that plants grow from seeds (*Mk* 4.1ff.), and that they develop of their own accord (*Mk* 4.27). While he admitted that He knew little about the actual mechanisms involved in the development of seeds, their growth is never ascribed to spirits, or even to God, but to the power of nature itself. Perhaps the passage which reveals a more accurate degree of scientific knowledge is the one in which Jesus makes the connection between various atmospheric phenomena. "In the evening you say, 'It will be fine; there is a red

sky', and in the morning, 'Stormy weather today; the sky is red and overcast" (*Mt 16.2f.*). Jesus scolded the people from His home town because, while they could read the face of the sky, they were unable to read the signs of his coming. But what He said contains a clear allusion to a certain accumulated experience of observing the atmosphere and, by implication therefore, to the intelligibility of nature.

These are only very weak indications, but they do still reveal the man Jesus as someone who observed nature carefully, someone who was curious about the phenomena surrounding life in the countryside, and someone who could draw from the book of nature teachings for living. There are just a few hints elsewhere in the Gospel about the scientific activity of those times. There is a reference to what doctors do. The evangelist Mark is quick to point out that a poor widow had suffered a great deal at the hands of doctors whose services had cost her all her money, but Luke – the doctor so dear to St. Paul (*Col 4.14*) – may be speaking with a certain sympathy and *esprit de corps* when he says that nobody had been able to cure her. Even astrologers, to whom we owe the beginnings of the science of astronomy, have a special place in the life of Jesus, since they were the first non-Jews to adore the new-born baby. The wise men from the east were known as 'Magi', a term that is quite vague, but conjures up the image of someone who studies the heavens. In recognising the coming of the Messiah, they stole a march on Israel's wise men, the experts on the Scriptures. This marks a clear victory for scientists over theologians. The one who declared Himself to be the Truth could surely never refuse those who struggle in their search for a better knowledge of nature, life and the world.

Faith and Reason: the Two Ways to Reach the Truth

In Jesus there are two modes of knowledge which differ in nature but have the same object. That is why He is able to say He is one with the Father, and yet admit that He does not know when the hour of judgement will come. As *Logos*, He is the creative wisdom which was there at the beginning of creation, as its architect (*Prov 8.30*), and yet He is unaware of how the seed sown by the sower grows. In Christ, divine knowledge and experimental knowledge are not opposed to each other, nor do they cancel each other out. They are different modes of knowledge which are united without confusion or change, without division or separation, according to the formula used by the Council of Chalcedon to describe the relationship between the two natures of Christ (*DS 302*).

In this way Christ Jesus is an extreme case of the relationship within the human person between faith and reason, and between science and faith. What there is in Christ in a unique and special way, the unity of two natures in a single hypostasis or person, is replicated analogously in Christians. Faith is the way they participate in the knowledge of God, which He Himself has revealed. Faith is, therefore, seeing things in God's own light. Faith also opens up a broad field of objects which would otherwise be inaccessible to human knowledge; the disputed questions on the *Scientia Christi* are an example of this. But faith never replaces experimental knowledge, which human beings acquire by their own efforts, as they attempt to unravel the secrets of nature. Faith does not annul reason and reason does not expel faith. They are both like 'wings on which the human spirit rises to the contemplation of the Truth' (*Fides et Ratio* 1).

A right understanding of the links between science and faith is absolutely essential if scientists are to avoid foundering in dire straits, steering clear as much of the Scylla of fideism as of the Charybdis of scientism, and if they are to avoid denying the problem by taking refuge in syncretistic solutions. Fideism¹³ thinks it can save faith by denigrating the capacity of human reason to reach the truth, and it has been a defence mechanism used by many believers in the face of scientific progress. But to deny reason its rights in order to save faith always impoverishes faith, which is then forced into pious sentimentality. Christianity's original claim was that it was the *religio vera*, that it possessed a truth about the world, history and humanity which would hold up in the face of reason. I like to remember what Chesterton said about going to church. We take off our hats, but not our heads.

This attitude crops up in another guise, in a sort of exhumation of the mediaeval theory of twin truths, whereby faith and reason each have their own province of knowledge, and it is thus possible to deny in one what one could affirm in the other. Scientists who were also believers have often adopted this compromise solution in order to deal with what they saw as an insurmountable conflict between the biblical account of creation and evolutionary theories. This means living in two separate worlds which can never be on a collision course because there is no contact between them. But this is yet another form of fideism which denies not

¹³ See my article 'Fideismo', in *Grande Dizionario delle Religioni* (Piemme, Casale Monferrato, 3rd. edn., 2000), pp. 753ff, and my *Un essai de philosophie chrétienne au XIX siècle*. L'abbé Louis Bautain (Paris, 1961).

the capacity of reason, but its right to enter into dialogue with revelation and faith.

The other danger which threatens the work of scientists is the temptation of scientific reductionism, or the belief that science is the only acceptable form of knowledge. Buoyed up by the unstoppable conquests of science, the scientist may play down other dimensions of human knowledge, regarding them as irrelevant. This applies not only to faith, but also to philosophy, literature, and ethics. Science needs to be open to other disciplines and to be enriched by data that come from other fields of investigation.¹⁴ Science is not capable of explaining everything. Paul Davies admits as much in *The Mind of God*, when he says that his desire to explain everything scientifically always comes up against the old problem of the chain of explanations. For him, ultimate questions will always remain beyond the realm of empirical science.¹⁵ I am happy to recall the symposium entitled *Science in the Context of Human Culture*, organised jointly by the Pontifical Council for Culture and the Pontifical Academy of Sciences in October 1990. Its great richness lay in its exploration of the need for greater interdisciplinary co-operation between scientists, philosophers, and theologians. Let me renew today the appeal I made then for dialogue, which becomes more and more difficult the more people's work becomes specialised. The remarkable experience of dialogue in those few days was formulated much more recently in the Pontifical Council for Culture's document *Towards a Pastoral Approach to Culture* (Vatican City 1999):

In the realm of knowledge, faith and science are not to be superimposed, and their methodological principles ought not to be confused. Rather, they should overcome the loss of meaning in isolated fields of knowledge through distinction, to bring unity and to retrieve the sense of harmony and wholeness which characterizes truly human culture. In our diversified culture, struggling to integrate the riches of human knowledge, the marvels of scientific discovery and the remarkable benefits of modern technology, the pastoral approach to culture requires philosophical reflection as a prerequisite so as to give order and structure to this body of knowledge and, in so doing, assert reason's capacity for truth and its regulatory function in culture (no. 11).

¹⁴ Cf. Paul Poupard, *Science in the Context of Human Culture II* (Pontifical Academy of Sciences-Pontifical Council for Culture, Vatican City, 1997).

¹⁵ Cf. *The Mind of God* (Simon & Schuster, London, 1992), pp. 14, 15, 232.

Scientia Christi

My dear and learned friends, we have spent time together along the intricate paths of human knowledge. Having spoken at length of Christ and science, I feel obliged to offer one final reflection on the knowledge of Christ: not on what He knew, but on the science which has Him as its object, the true science of life.

On this subject, I am reminded of some words spoken some forty years ago by Paul VI. It was in 1963. Paul VI had just been elected Pope and was welcoming the Members of the Pontifical Academy of Sciences for the first time. Perhaps some of you were present, along with me, then one of the Pope's youngest colleagues. He expressed his joy over a stimulating certainty: 'the religion we are happy to profess is actually the supreme science of life: thus it is the highest and most beneficial guide in all the fields where life manifests itself'. He concluded by developing a very beautiful thought: 'religion *may appear to be absent* when it not only allows but requires scientists to obey only the laws of life; but – if we look more closely – religion will be at their side to encourage them in their difficult task of research, reassuring them that the truth exists, that it is intelligible, that it is magnificent, that it is divine'.¹⁶ Christ *may appear to be absent*, but He is not. Ladies and gentlemen, in this Jubilee Year, dedicated to Jesus Christ, allow me to invite you most sincerely to do all you can to acquire this supreme science.

¹⁶ Paul VI, 'Discorso alla Sessione Plenaria della Pontificia Accademia delle Scienze, 13 October 1963', in Pontificia Academia Scientiarum, *Discorsi indirizzati dai Sommi Pontefici Pio XI, Pio XII, Giovanni XXIII, Paolo VI, Giovanni Paolo II alla Pontificia Accademia delle Scienze dal 1936 al 1986* (Vatican City, 1986), pp. 109-111.