



## R. Wayne Kraft Memorial Lecture



This annual lecture, part of the university's *Heritage Week* celebration (previously "Patron's Day"), offers a current theological viewpoint related to or informed by the spiritual tradition of the university's patron – **St. FRANCIS DE SALES**. Speakers of national prominence are invited to present this lecture on campus. The text that follows is provided for personal enrichment and is not intended as a commercial or professional publication.

**Thomas King, S.J.**

### ***TEILHARD DE CHARDIN: SEEING CHRIST AS A SCIENTIST***

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Fr. Thomas King is Professor of Theology at Georgetown University. He is the author of *Teilhard's Mysticism of Knowing*, and co-editor of *Teilhard and the Unity of Knowledge*, and *Letters of Teilhard de Chardin and Lucile Swan*.

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I am very pleased to be giving a talk on Pierre Teilhard de Chardin in memory of Wayne Kraft. It was at a gathering in honor of Teilhard in Philadelphia in April of 1975 that I first met Wayne. After the others had left, the two of us stayed talking with great excitement and were surprised by how much we had to share. For Teilhard had shown both of us the meaning of faith in the present century. In 1982 Wayne and I were founding members of Cosmos & Creation, a group of believing scientists that has had an annual meeting for the past 17 years. Wayne had been interested in systems thinking and found Teilhard enabled him to see the centrality of Christ in this interest. This he presented in his writings and talks. As Wayne used Teilhard to see the relevance of Christ in terms of systems philosophy; so I used Teilhard to understand how Christ was integral to the workings of my own mind. It is of this that I will speak.

Pierre Teilhard de Chardin was born in central France in 1881. From his father he gained a deep love of the natural world and from his mother a deep love of the Sacred Heart. After graduating

from a Jesuit *college*, he entered the Jesuits and twelve years later was ordained; his studies in geology at the University of Paris were interrupted by World War I and four years of trench warfare on the battlefields of France. After the War he continued his doctoral studies, received his doctorate, and first went to China in 1923. There he would spend his professional life working on the geology of Asia. He was geologist for the group that discovered Peking Man. His published scientific writings have been collected in ten large volumes. But during his lifetime the Church placed restrictions on his writings in philosophy and theology; these could be published only after his death in New York City in 1955. They have been collected in thirteen volumes. Since his death there have been significant indications of Church acceptance of his texts: In 1981 the Vatican spoke of him as "a man seized by Christ in the depths of his being"; he was seen, as it were, responding in advance to John Paul II's appeal to bring Christ to the modern world. Recently, when John Paul II reflected on the meaning of the Mass in *Gift and Mystery*, he used a text of Teilhard to develop his own reflections.

Most of the texts of Teilhard were scientific texts treating of the evolution of life; he would see the entire history of life on earth leading to the formation of the Body of Christ. He would put it, "Since all time and forever, but one single thing is being made in creation: the Body of Christ" (CE,74). It was this vision that led him through World War I and through geological digs across the faces of China, Burma, India and Africa. But in saying that all things are coming together to form the Body of Christ he did not think all things would merge together to form a common glut. Rather he told of an organic union wherein the individuality of each element would be intensified. He would express this in a famous phrase: "Union differentiates." For example: an organism is a union of organs, but it does not blend all the organs into a common soup; each organ has to remain itself; in fact, each organ can be fully itself only within the organism. Likewise, in the union of love those united do not melt and lose their identity, rather they attain their identity through the union. They become more themselves, differentiate, in the process. This theme runs throughout his masterwork, *The Phenomenon of Man*.

But I would like to tell you of my interest in Teilhard and how he transformed my way of seeing my own faith. I first read a text of Teilhard in 1962; it was *The Divine Milieu*, a highly devotional text Teilhard wrote in Peking in 1926-27. After I had read *The Divine Milieu* for ten minutes I had a sense that the book was written just for me. I read with increasing rapidity and, though I was passing over many passages that I did not understand, I was amazed that someone could speak to me as no other author had done. I have called the work a religious or devotional work, and so it is. Later I found that Teilhard claiming he wrote the work "as a naturalist or a physicist." Could a devotional work be written as one would write science? We know that early in the last century Auguste Comte had claimed that early civilizations spoke in theological terms, later civilizations spoke in metaphysical terms, but now they must speak in the observational terms of the scientist. In a general way such a change has taken place. But how can one speak of faith in scientific terms? How could one write a devotional work as "a naturalist or a physicist"?

The immense advances of the sciences and their vitality can be traced to what is often considered the scientific method. The scientific method works by taking a hypothesis and submitting it to physical testing. Could the faith be considered an hypothetical set of truths subject to verification? Teilhard believed it could and argued that for the faith to regain its vigor it must be taken that

way. We might look down on the hypothesis as a lesser form of knowledge than faith, but Teilhard did not see it that way. For Teilhard the hypothesis is "the supreme spiritual act...(wherein) the dust cloud of experience takes on form and is kindled at the fire of knowledge" (AE,9; VP,205). Today many believers would be reluctant to see their faith as an hypothesis. For an hypothesis is to be tried out in experience and rejected or accepted accordingly. Teilhard believed faith should also be put to the test; many of his Jesuit friends did not see it that way.

Teilhard had a close Jesuit friend, Auguste Valensin, who was also a great scholar and author of many learned books and articles. But at one point Teilhard observed that his friend Valensin was making a "cassette close" out of the articles of faith. Valensin had a strong faith, and accepted all that the Church taught, and then went about his research. But Teilhard objected that, "If Christianity offers us nothing but certain "cassettes close," then people will soon throw both Christianity and the cassettes overboard" (Li,363). And this is precisely what Teilhard saw happening. Christianity was seen as a little package of claims that you accepted or not, and then went about your work, as did Fr. Valensin. Many people began to wonder why they were bothering to hold on to the Catholic cassette, so they let it go. Taking the faith as an hypothesis would involve bringing the cassette out into the turmoil of life and seeing if it survives. Teilhard found it did.. Consider how the hypothesis effects the mind and how the dust is kindled into fire.

Teilhard was a research scientist; by work in the field he helped reconfigure the geology of Asia; he was much involved in the search for early human remains in China, India and Java. Fellow scientists have told of his remarkable ability to recognize a primitive, stone tool amid the broken stones of a gravel bed. I suspect you or I would see the "tool" as only one more broken stone. What enabled Teilhard or other trained geologists to see it differently was his field work. Teilhard had worked with thousands of such stones and tried to understand the humans who had fashioned them. He knew their tool-making techniques and had tried them himself. He knew that over time tool making went through different phases as the human skill with tools advanced. Knowing this history Teilhard's eyes could suddenly pick out a tool from the broken rocks in a gravel bed. One rock would light up with meaning, implications about those who made and used it. Many eyes had seen the broken rock, but it could take on meaning only for someone who had an hypothesis of how tool making developed in Asia. To the eyes of such a one the small scratches would stand out with great significance, and one's hypothesis concerning the history of tool-making in Asia would gain a nuance.

Seeing is more than what strikes the retina of the eye; yet our seeing begins that way. Teilhard would have it that when we first opened our eyes, we saw "light and things around us all jumbled up and on a single plane" (PM,216). Perhaps the first development in our ability to see was in coming to see a three-dimensional world. Seeing three-dimensionally involves an *interpretation* of the pattern of colors that strikes the retina. Though one might argue that the mind has added the interpretation to the data in order to render it coherent, the result is that this interpretation has worked its way back into the perception itself so that we *see* differently than before. We *see* a three-dimensional world. By further developing our vision we come to see in many additional ways. To illustrate this in other examples: one person who *works* with cars can open the hood of a disabled car and suddenly "see" the problem; another person would see only a jumble of dark metal; one who *works* on Wall Street can turn to the stock market pages and "see" a recession

beginning, while another sees only more or less meaningless numbers. Teilhard often tells of a training of the eyes; the car mechanic and the stock broker have learned how to see in their respective fields. Likewise, Teilhard had learned to see in his field of paleontology; but Teilhard was also a priest and likewise he had learned to *see* in the field of Christology. For Teilhard the stone tool would "light up" with meaning; in a similar way the world would light up with Christ. But one must note: the object would light with meaning only for one who works in the field.

To explain this "lighting up" I will refer back to the phrase of Teilhard considered earlier: "union differentiates." In first introducing the phrase I was speaking of the unity of the elements in a biological organism, but here I will present it as characteristic of a good hypothesis. If the hypothesis is true it will bring a unity to the data, and at the same time enable the data itself to acquire a sharpness of feature. In doing any kind of research (historical, literary, scientific) we come up with an hypothesis; then we look to the data to see how it looks. Perhaps it does not quite fit and the data seems blurred. So we might try to modify the theory or check the data, but we begin to feel uneasy with the hypothesis. The hypothesis has given a certain unity, but, if in gaining unity the data has been distorted, we suspect the hypothesis. Yet we also come up with hypotheses that breathe new life into the data. The details stand out more sharply than ever; this is unity differentiating. We judge the hypothesis to be correct if it makes the details stand sharply forth. Teilhard puts it, we find "the landscape lights up and yields its secrets" (PM,32). This is what Teilhard could *see* in the broken rock; the small scratches and chips seemed to light up with meaning as he considered it as a tool. But the landscape would do so only for one who worked in the field.

At one point, Teilhard wrote a few paragraphs on nuclear physics. But first he apologized for not having the direct and familiar contact with such physics that he needed to do it justice, "that contact that comes from experiment and not from reading and makes all the difference" (PM,39). The well-read reader of science has a very different outlook than the working scientist. And the difference can be seen by reconsidering the phrase: union differentiates.

Teilhard believed the differentiation is what enables a scientist to tell whether his hypothesis is true. For example: in the *Phenomenon of Man*, Teilhard's primary work, a work written in China 1938-40, Teilhard argues that evolution has a direction and the direction is towards increased consciousness. That is his hypothesis; it claims that evolution is not simply the random process postulated by orthodox Darwinism, rather it involves a generalized move to increased consciousness. The evidence of this could be seen in the fossil record that shows the widespread development of the nervous system, the basis of consciousness. To defend his claim Teilhard argues that when the tree of life is considered in terms of elaborating more complex nervous systems, the whole picture of evolution clarifies. That is, if one holds the hypothesis that evolution has a direction and that the direction is towards the increase of consciousness, this "confers on the tree of life a sharpness of feature, an impetus, which is incontestably the hall-mark of truth. Such coherence ...could not be the result of chance" (PM,147). The "sharpness of feature" is the differentiation of the data, while "coherence" tells of the union. To one familiar with evolution the tree of life would stand forth with a sharpness of meaning. To consider another example: Teilhard claims that education is integral to evolution. Then to justify the claim he adds that the hypothesis "derives unquestionable verification from the very coherence which it brings to the whole

landscape, and the relief into which it throws it" (FM,32). The coherence is the unity and the landscape brought into sharp relief is the differentiation. Union differentiates.

A number of philosophers of science, Albert Einstein, Paul Dirac, Paul Davies, etc. have spoken of the beauty of a scientific theory. They have left these allusions to beauty in their texts without explanation. I would see Teilhard's "union differentiates" as the best way of understanding what they meant. In science beauty would occur when one sees an immensity of data coming together into the unity of a simple theory. A valid theory (or hypothesis) makes the data both light up and cohere, while an invalid theory blurs and distorts the details. They don't quite seem to fit. Thus, beauty could be seen as the unity which differentiates the data.

Back to the difference between reading science and working in science: If one has not done field work in evolution, or tool making, or auto mechanics, one would not see the world light up. Consider an example. From our reading we probably know the famous formula of Einstein,  $E = mc^2$ . But not many of us have worked with it. Yes, all of us might be able to say that E stood for energy and m for mass and c for the speed of light. We stop there and accept the claim on faith without further thought, for we have nothing to think about. If we do not work in a field related to relativity, we make of it a *cassette close*. We accept it on faith because we hear that is what the scientific community holds, but it has no effect on our experience. We do not find that experiential details stand forth more sharply; our world does not light up; and one theory is not more beautiful than another. If tomorrow we heard that scientists had corrected Einstein and that the theory should read  $E = mc^3$ . We would dutifully replace the old cassette with a new one. It would be another revelation of a sort from higher authorities, but it would not enable us to see a different world. We do not work in the field, so the change would add no unity (coherence) to our vision and it would not sharpen the details of our world. Some people take the Bible that way, as a *cassette close*. They accept the Bible on the authority of God, or on the authority of a community they trust. They may memorize and recite its passages, but the Bible does not light up their world; it does not give coherence to their lives. They accept it dutifully much like they accept  $E = mc^2$ . It is a higher truth that has been handed down to them. Then Christian faith or Catholic faith would consist in affirming the correct creed; while non-Christians have been handed the wrong cassette. But what about what Christianity does for the world one sees and the world one lives?

Teilhard would speak of two kinds of knowledge: an abstract knowledge that is found in geometry and theology; it concerns the world of ideas and principles; for this type of knowledge he felt an instinctive distrust. But he told of a second type of knowledge that he favored; this concerned physics and mysticism. The difference between geometry and physics can help clarify the difference between the theology of principles that he did not trust and the mysticism that he did. Both geometry and theology can form *cassettes close*. But physics cannot. One can build the principles of geometry into elaborate structures; one can do the same with the principles of revealed theology. This was done with a certain brilliance during the Middle Ages. Today things do not seem so simple. Today we have many different geometries (not only Euclid) and many different theologies (not only Christianity). Each might be consistent in itself, so considered abstractly it might seem there is no way to prefer one cassette to the others. Each is what Teilhard would see as a pseudo-absolute. The sensible solution would seem to be to mistrust all of them and get on with one's life.

But scientists have found a way out of the dilemma. They test geometries in experience. The time has come to test theologies in a similar way. For centuries the Euclidian geometry worked wonders, but the time came when physicists saw the universe behaving in ways other than Euclid would allow. So they adopted another geometry that made the data cohere. The new geometry lit up details found in their research. So they accepted it. Such is the living reality of modern physics. The geometry of Euclid tells of a world of perfect form that can be seen as a world apart; it also has been used to tell us much about this. We might consider one such moment: Archimedes knew his geometry, but he was also a physicist. Archimedes took the heavenly truths of Euclid and applied them on earth. Stories tell of Archimedes wanting to know if the king's crown was made of solid gold. While considering the issue, he stepped into his bathwater only to see the water rise. He shouted, Eureka, "I have found it." His excitement was in seeing the solid geometry of Euclid in the rising water. I believe that Teilhard, during his wartime years, did much the same: he took the heavenly truth of Christianity out of the sky and shouted with excitement. The dust of his experience was kindled into fire. I believe this is the secret of his extraordinary appeal. He tells of the Gospel as lived experience. He was caught in a war that was brutal and ugly, yet by seeing it in Gospel terms he found the horrors of war light up with meaning. The essays that Teilhard wrote during World War I are complex and difficult to follow, but one thing that Teilhard is saying with an excitement that is contagious is "Eureka!" Theology had become his experience. His theology was no longer a *cassette close*; it was seen - seen in the world of experience. As Archimedes did with the geometry of Euclid, Teilhard is asking us to do with Christian theology: make it a working hypothesis. He claims that Christian theology will give coherence (union) to our experience and sharpen (differentiate) the details of life.

To illustrate what Christian theology can do to experience, consider a phrase from the New Testament that was an important faith-claim for Teilhard during his wartime years: "To the one who believes all things work together unto good." Teilhard believed it was a great line, so he tried to take it to experience. One of his wartime essays is titled "Operative Faith;" it concerns working with this phrase. With the hypothesis that God was bringing good out of the War he could conclude that "the elements cohere in a rigorously differentiated individual nature," and "everything remains the same as far as phenomena are concerned, but at the same time everything becomes luminous (WTW,240,244,246). By the hypothesis of Christian faith the landscape of war had lit up with meaning. But the essay ends with a warning: if one claims to understand what he is saying "without putting one's hand to the plough, that person is deluding one's self" (WTW,247). The plough is the world of experience; there we must become one who works with the faith. We must try out the faith in experience. Otherwise we can study the texts of Teilhard till we know them well, then we can add the "theology of Teilhard" to our set of theological "*cassettes*." "Teilhardianism" has become a theology we can explain, and not a mysticism we can live. Our world has not lit up.

Teilhard also modified the revelation. He took the phrase, "To the one who believes all things work together unto good" and changed it to "...all things work together unto Christ." The Christ is the ultimate Christ, the one of whom Paul's Letter to the Colossians said "in Him all things hold together." It is the risen Christ, the Alpha and Omega, the one to whom the universe is being drawn. He seemed to be speaking of a Christ he saw, and not simply of a Christ about whom he had read; he spoke from experience. This is best found in one of his prayers:

Glorious Lord Christ: the divine influence secretly diffused and active in the depths of matter, and the dazzling center where all the fibers of the universe meet.... you whose forehead is of the whiteness of snow, whose eyes are of fire, and whose feet are brighter than molten gold; you whose hands imprison the stars; you who are the first and the last, the living and the dead and the risen again... it is to you to whom my being cried out with a desire as vast as the universe, 'In truth, you are my Lord and my God.' (HM,131-32).

"My Lord and My God!" It is the phrase St. Thomas used when he touched the risen Lord. Teilhard used the same phrase, for he found that Christ had become tangible. It is the prayer one can make only after one has taken the Gospel as a scientist would, as a working hypothesis. By doing so Teilhard found the world itself took on a radiant meaning and all the details of the human landscape had come to life. That is what he claims we will see if we take the Gospel as our guiding hypothesis.

Teilhard wanted us to see the risen Christ, so he presented many of his works as attempts to see and to help others see. Many people in today's world can see no future for themselves or for the world. They see death and darkness everywhere; and it all goes back to the hypothesis by which many live today. In the words of Teilhard, they see "the paralyzing poison of death eats into everything" (AE,400). But if they could make an act of Christian faith, they will see a different world. This is what frequently happens at a moment of conversion. People suddenly see their own lives differently. They see that Christ was present throughout their long and fruitless struggles; everything seems to make sense; all their confused gropings gain a unity and details stand out with a new sharpness.

Teilhard asks, "What prevents you from enfolding Christ in your arms? Only your inability to see" (DM,46). He has many statements that speak of seeing Christ that are surprisingly vivid: "One feels in things the touch of Christ's hand," "Like other real objects Christ is experienced." or "the world...takes on Christ in its inner substance," "God is "perceived by our eyes," we have a "perception of the divine spread everywhere." The divine illumination has exalted "all that is most specific" (DM,116). All things are united in God, but at the same moment God "pushes to its furthest possible limit the differentiation among the creatures he concentrates in himself" (DM,116). When looking at the rocks, Teilhard had developed his eyes to the point he could quickly "see" a tool where others could see only a rock; likewise Teilhard had developed his eyes so that he could "see" Christ present where others could see only futility or the horrors of war. Teilhard's hypothesis had taken the dust of war and brought it together into the fire of an understanding. Teilhard writes,

the man who *dares* to believe reaches a sphere of created reality in which things, while retaining their habitual texture, seem to be made out of a different substance.... through the operation of faith Christ appears (WTW,246).

Teilhard introduced several of his works as attempts to see and to enable others to see. That is what he has done for me; he has opened my eyes to Christ in my own life. I struggle to see better. There are times I find myself living the faith like Teilhard's Jesuit friend, Auguste Valensin; it is a

*cassette close* that I duly affirm. I affirm it as a reader, not a scientist, not with my hand to the plough. All of us are immersed in a dust of incoherent experience. Maybe we adjust by calling it a mysticism of unknowing or maybe it is just a dull stupor that seems to run through our lives. At other times we endure great events, but hardly speak of them for we have no adequate words. Teilhard tells us that by making Gospel phrases his working hypotheses he found his life and his brushes with death light up with meaning; so like Archimedes he would speak with excitement of what he had seen. It was not the geometry of Euclid seen in bathwater, but the risen Christ seen in the day's events. Can such an hypothesis bring coherence to the data of our life? Or to the dust of our death? Teilhard claims they kindled his world into fire. He has taught my eyes to see the fire. Geometricians and theologians and those with closed cassettes will not understand this, but physicists and certain mystics will.

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### **Abbreviations:**

AE -- *Activation of Energy*, translated by Rene Hague. New York: Harvest Books, Harcourt Brace Jovanovich, 1963.

CE -- *Christianity & Evolution*, translated by Rene Hague. New York: Harcourt Brace Jovanovich, 1971.

DM -- *The Divine Milieu*, translator unidentified. New York & Evanston: Harper & Row, Colophon Books, 1965.

HM -- *The Heart of Matter*, translated by Rene Hague. New York: Harcourt Brace Jovanovich, 1978.

PM -- *The Phenomenon of Man*, translated by Bernard Wall. New York: Harper & Row, 1959.

VP -- *Vision of the Past*, translated by J. M. Cohen. New York: Harper & Row, 1966.

WTW -- *Writings in Time of War*, translated by Rene Hague. New York: Harper & Row, 1968.

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