

*Earth Day Lecture. University of St Thomas, Houston (Thursday, April 15) followed by roundtable discussion on Friday, April 16, 2010.*

## **Creation and the University: Educating for a Human Ecology**

**Stratford Caldecott**

**IMAGE 1** A galaxy, one of millions, each containing hundreds of millions of stars, taken by the Hubble Space Telescope. It is approximately 320 million light years away. **IMAGE 2** This is the Eagle Nebula, only 6,500 light years distant inside our own galaxy. **IMAGE 3** This was taken by a land-based telescope, of Orion's belt. **IMAGE 4** And these are the so-called "Pillars of Creation"

*When I see the heavens, the work of your hands, the moon and the stars which you arranged, what are we that you should keep us in mind, men and women that you care for us?*

A question often asked (rhetorically) by modern sceptics is how the Maker of such a vast universe could be as concerned as the Bible claims he is with one tiny planet and one tiny species among so many. The question was answered by J.R.R. Tolkien in *The Silmarillion*, when he writes in his Elvish creation myth the Ainulindale:

*"Now the Children of Iluvatar are Elves and Men, the Firstborn and the Followers. And amid all the splendours of the World, its vast halls and spaces, and its wheeling fires, Iluvatar chose a place for their habitation in the Deeps of Time and in the midst of the innumerable stars. And this habitation might seem a little thing to those who consider only the majesty of the Ainur, and not their terrible sharpness; as who should take the whole field of Arda for the foundation of a pillar and so raise it until the cone of its*

*summit were more bitter than a needle; or who consider only the immeasurable vastness of the World, which still the Ainur are shaping, and not the minute precision to which they shape all things therein.”*

In this story Iluvatar is God, the Ainur are Angels who help him to fashion the world, and Arda is the Earth. **IMAGE 5** Tolkien is asking us not limit God by assuming he has no eye for detail, or that he would ever get bored with the vastness of space.

**IMAGE 6** Earth Day, celebrated since 1970 either on 22 April or else on the March Equinox, has become an important occasion to recall our interdependence, and the fragility of human life in the midst of a vast cosmos and among the millions of species that share this planet with us. We also recall our responsibility as stewards of creation. Such talk is sometimes dismissed by conservative Christians because of its associations with Leftish politics and New Age neo-paganism. But this is inappropriate. Pope John Paul II repeatedly emphasized that ecological concern is a vital element in Catholic social teaching, and Pope Benedict XVI has continued the emphasis. He made the point most recently *Veritas in Caritate* (2009) and his Message for the World Day of Peace, 1 January 2010, which ends with the words, “*If you want to cultivate peace, protect creation.*” The *magisterium* of the Church is therefore clear upon this point, and it is incumbent upon a Catholic university to allow its curriculum and its ethos to be shaped in part by this concern, so that the university both acts as a responsible steward itself, and teaches its students to do likewise.

The most recent encyclical made a particular point of emphasizing that the intimate link between humanity and the environment is a two-way street. Let me quote from section 51:

*The Church has a responsibility towards creation* and she must assert this responsibility in the public sphere. In so doing, she must defend not only earth, water and air as gifts of creation that belong to everyone. She must above all protect mankind from self-destruction. There is need for what might be called a human ecology, correctly understood. The deterioration of nature is in fact closely connected to the culture that shapes human coexistence: *when “human ecology” is respected within society, environmental ecology also benefits...* If there is a lack of respect for the right to life and to a natural death, if human conception, gestation and birth are made artificial, if human embryos are sacrificed to research, the conscience of society ends up losing the concept of human ecology and, along with it, that of environmental ecology. It is contradictory to insist that future generations respect the natural environment when our educational systems and laws do not help them to respect themselves.

The “book of nature,” the Pope goes on to say, is “one and indivisible”. Today I want to explore the crisis of modern university education in the light of this teaching, with particular attention to the history of science, and the profound gulf that has opened up between science, art and faith, both in the university and in the civilization around us. For despite the great advances of science in the modern period, which have revealed the beauty of our little world suspended in the midst of a vast universe of “wheeling fires”, there is another sense in which the knowledge of the scientist has been shrinking rather than growing. I am referring to the tendency to *specialization* in modern education and scientific research. The picture presented by science as a whole is impressive – though it concerns only one “level” of existence, namely the material. But the individual scientist takes most of what he knows about the world on faith like the rest of us, faith in the authority and reliability of his colleagues, since his own field of study is necessarily tiny. In fact there is a well-known joke to the effect that the individual

scientist knows more and more about less and less, until he knows everything about nothing.

**IMAGE 7** This is almost literally true in the case of physics, which has become a search for the smallest and most fundamental particles and principles governing the universe. Some physicists now claim to know so much about “nothing” that they can explain how the universe emerged from a quantum vacuum or “zero-point field” through random fluctuation.<sup>1</sup>

Specialization affects every field, not just the sciences but the humanities too, and the effective divorce between these two groups of subjects is itself part of the fragmentation. Our knowledge has increased exponentially, yet as *knowers* we are increasingly fragmented. In a previous age it was possible for a genius like Leonardo to know almost everything that was known about everything; now it is almost certainly not. But what is still possible for each of us to discover is *how everything connects together*. We might not know anything except our own field in great detail, but we can put a broken world back together, and that is the task of the new educators.

A Christian education needs to be founded on an adequate understanding of the human being and its destiny. That is to say, not on a theory, let alone an ideology, but on a genuine respect for the human mystery, the mystery of the human person. A true education is an education of what is most human about us, of our freedom, which is a relationship with infinity. It opens us up to the totality of reality.<sup>2</sup>

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<sup>1</sup> This naturally means, however, that the quantum “vacuum” as it is called is nothing of the sort, since while it may contain no actual particles, it does contain energy equivalent to the cosmological constant – not to mention the laws of nature by which this miraculous universe allegedly jumped into existence. So, even in modern science the ancient principle still holds: nothing comes from nothing.

<sup>2</sup> Luigi Giussani develops this approach to education in his book *The Risk of Education: Discovering Our Ultimate Destiny* (Crossroad, 2001).

Therefore I agree with the person who said that “Education should consist of a series of enchantments, each raising the individual to a higher level of awareness, understanding, and kinship with all living things.”<sup>3</sup> This is the theme I want to explore today. It seems to me that Earth Day is a good occasion on which to do so.

## **Beauty and Truth**

First, here are some more pictures. **IMAGE 8** This is a famous painting by Raphael that occupies an entire wall in the Vatican Museum. Called *The School of Athens* it represents the community of ancient philosophers, with Plato and Aristotle framed by the central arch.<sup>4</sup> **IMAGE 9** Here is a closer look at Plato and Aristotle. Down on the left side near the front, you’ll find Pythagoras with the Arab philosopher Averroes peering over his shoulder. **IMAGE 10** It is with the shadowy figure of Pythagoras that my story really begins. There is a legend, like the one about Newton being hit on the head by an apple and discovering the law of gravity, that Pythagoras discovered the laws of harmony by walking past a blacksmith’s shop. He heard the smith pounding on an anvil with hammers of different weights that made different sounds, and decided to investigate the relationship between the weight of the hammer and the tone of the sound. In that way he invented scientific method at the same time as he laid the foundations of Western music.

Known also as “the first philosopher” and “the father of numbers”, Pythagoras represents the original unity of science and art, faith and reason, science and religion. In his youth he travelled all over the known world in search of wisdom, including Egypt, and may even have run into the Jewish people during their Babylonian exile – some writers have thought he learned from them the four-letter

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<sup>3</sup> The quotation serves as an epigraph to Peter Milward SJ’s lovely book, *Wisdom and the Well-Rounded Life* (Fulcrum, 2009).

<sup>4</sup> For detailed description see <http://www.thomasmorestudies.org/curriculum/history.html>

name for God which became the basis for his sacred symbol, the *tetraktys*. Another legend. The important thing is not so much what Pythagoras himself did and thought but what his followers have done. Plato, despite some important reservations, was one of those followers; so, much later, were both Copernicus and Kepler, the founders of modern astronomy. In fact the idea that numbers give us access to ultimate reality was a Pythagorean notion, and the search for a mathematical “Theory of Everything” today is the continuation of the original Pythagorean quest. The desire of the physics geek to explain the universe with a formula you can wear on your T-shirt proves him the heir of the Christian mystics and of the Pythagoreans.

I recently re-read a bestseller of the 1970s, Robert Pirsig’s *Zen and the Art of Motorcycle Maintenance*. How many of you remember that book? **IMAGE 11** I had read it first years ago, when I was more interested in Zen than Christianity. I am still not at all interested in motorcycle maintenance. **IMAGE 12** But many of the things it says are worth reflection. Pirsig defined the problem of our culture as a fundamental split between what he called the “classic” and “romantic” ways of approaching the world, or else the “technological” *versus* the “humanistic”. What he was seeking was “a complete structure of thought capable of uniting the separate languages of Science and Art into one” (p. 270). And he thought he had found it in the over-arching notion of “quality” which precedes the division of the world into subject and object. For him, the clue lay in the notion of “mathematical beauty”, a harmony of numbers and forms, which showed that beauty (or quality) is to be found on both sides of the classic/romantic split. So he quotes Poincaré: “This is the true esthetic feeling which all mathematicians know, but of which the profane are so ignorant as often to be tempted to smile” (p. 268). In similar vein, the British mathematician G.H. Hardy writes in *A Mathematician’s Apology*: “The mathematician’s patterns, like the painter’s or the poet’s, must be *beautiful*; the

ideas, like the colours or the words, must fit together in a harmonious way. Beauty is the first test: there is no permanent place in the world for ugly mathematics”.<sup>5</sup>

Like Pirsig, educationalist James S. Taylor makes a similar contrast between “poetic knowledge”, meaning an inward or intuitive grasp of the world, and the “scientific” mode of knowledge based on the gathering of mere quantitative measurements.<sup>6</sup> Poetic knowledge is emotional, sensory, empathetic, and involves the whole person in the act of knowing. It is knowledge by “connaturality” or participation that finds *within the self* something that corresponds to the object, leaping over the barrier between self and other. So a person gazing at the stars, even if he cannot measure them in the way demanded by science, may be led to a part of himself in which those great distances and holy fires are felt to exist and possess a meaning. In my book I rather controversially suggested that the opposition between the two modes can be overcome by revisiting the ancient conception of number, and by teaching science and mathematics themselves at least in the early stages according to the poetic (or symbolic) mode. Taylor himself describes a truly humane education as one “that begins with the senses and the discovery and cultivation of harmony and beauty in the soul by way of the sense’s natural affinity for the harmonious, proportionate, and the beautiful in nature and the arts.”<sup>7</sup> **IMAGE 13**

We have lost the connection between beauty with truth, but it is not too hard to find it again. G.H. Hardy certainly regards mathematics as being concerned with truth, not merely aesthetics. This is the “rock on which all idealism founders,” he writes: “317 is a prime, not because we think so, or because our minds are shaped in one way rather than in another, but *because it is so*, because mathematical

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<sup>5</sup> G.H. Hardy, *A Mathematician’s Apology* (Cambridge University Press, 1940), 85.

<sup>6</sup> James S. Taylor, *Poetic Knowledge: The Recovery of Education* [details to follow].

<sup>7</sup> *Poetic Knowledge*, 49.

reality is built that way.”<sup>8</sup> This mathematical reality lies “outside us”, he thinks, and our function is to discover or observe it, the theorems which we describe as our creations being simply the “notes of our observations”.<sup>9</sup> And Hardy is by no means alone in this. It really does seem that despite the influence of philosophical schools hostile to metaphysics, scientists and mathematicians have tended to be “realists” in their outlook, observing forms in nature through the use of the imaginative faculty, and allowing themselves to be guided towards truth by beauty.<sup>10</sup>

### **The Theological Horizon**

This is, however, only a pointer in the right direction, not in itself a solution. For that we must look not to any one of the fragmented disciplines, but first of all to the one in whom they converge. We must look to the human person who is the subject and in a sense the object of all these disciplines. The University is tearing itself apart because man himself is torn apart. If you recover a Christian vision of man, you recover a Christian vision of the University. And where do we see man restored to unity? According to the Second Vatican Council, in the phrase that

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<sup>8</sup> *Ibid.*, 130.

<sup>9</sup> *Ibid.*, 123-4. He concedes there is not agreement among mathematicians or philosophers as to the nature of this reality, about whether it is constructed by us or not. “A man who could give a convincing account of mathematical reality would have solved very many of the most difficult problems of metaphysics. If he could include physical reality in his account, he would have solved them all” (123).

<sup>10</sup> Symmetry is one element of beauty, and in the book I describe how one physicist attempted to locate all particles on a grid consisting of the most symmetrical object conceivable – and failed. Does this failure disprove the coinherence of beauty and truth? Hardly. For in fact a slight departure from symmetry is even more beautiful. This is true at many levels. In the early moments of the big bang, if matter and antimatter had been exactly balanced the universe would have destroyed itself. I recently read of some research into the shape of the neutron, which at present appears perfectly symmetrical, having an electric charge (or more precisely “electric dipole moment”) of zero. Researchers hope to find some slight asymmetry in order to explain the excess of matter over antimatter which enables us to exist. Zero is the most symmetrical of numbers but not the most beautiful, and being is always a departure from it. The pattern of human love has been described by Angelo Scola precisely in terms of “asymmetrical reciprocity”. Thus the slight tension of asymmetry runs right the way through creation, from top to bottom, as the mark of the Creator, and is only resolved by the Trinity in a way that eternally preserves difference.

John Paul II called the hermeneutical key to his pontificate, “Christ the new Adam, in the very revelation of the mystery of the Father and of his love, fully reveals man to himself and brings to light his most high calling” (*Gaudium et Spes* 22). **IMAGE 14** It is the Logos revealed to us in Christ who is the mediator, connecting everything together – not just heaven and earth, but all that is on earth as well. It is he who affirms the diversity of the world in the very act of revealing its unity and meaning – a meaning towards which all disciplines naturally converge.

That Christian vision cannot simply be imposed, however, by some kind of reform, although certainly reform will follow. It is genuinely a vision, not an ideology. You can throw the components together in a Catholic way, but you cannot force them to cohere. What is needed is a certain kind of conversation, not just between disciplines but *within* disciplines. The Logos does not need to be brought to physics or biology or chemistry or mathematics *from* philosophy or theology. It is already there. The sciences need to find a way to the Logos from within their own field and method of study. In this deepening of their own questions theology and the humanities may be of assistance, by engaging them in a probing discussion that will reveal to them the philosophical and other assumptions and commitments that have lain concealed from view in the way they do things and talk about the things they do.

Reductionism is in any case becoming *passé* in a world of fractals, emergent complexity and systems theory. **IMAGE 15** Formal causality begins to re-enter the scientific picture through field theory, and even final causality makes more sense in the light of strange attractors and the unity of space-time. There are analogies throughout nature that point towards the higher-order principles of providence and love. This is not to say that the higher principles can become the

subject-matter of science, but simply that they offer a larger framework within which science can grow to a fuller stature.<sup>11</sup>

One of the classic modern writings on the nature and mission of the university was by John Henry Newman, perhaps the greatest Catholic thinker of Victorian England, whose beatification will take place later this year. Newman's views have recently been explained and defended by the philosopher Alasdair MacIntyre in his book, *God, Philosophy, Universities*. There he puts his hope in Catholic philosophy, as "redefined" by John Paul II in *Fides et Ratio*, to rise above the "servile" concerns of the modern university and engage once more in the asking of difficult questions. **IMAGE 16** Pope John Paul's encyclical, which mentions Newman among others, is a truly visionary document for educationalists. He begins with the experience of wonder at creation:

Driven by the desire to discover the ultimate truth of existence, human beings seek to acquire those universal elements of knowledge which enable them to understand themselves better and to advance in their own self-realization. These fundamental elements of knowledge spring from the *wonder* awakened in them by the contemplation of creation: human beings are astonished to discover themselves as part of the world, in a relationship with others like them, all sharing a common destiny. Here begins, then, the journey which will lead them to discover ever new frontiers of knowledge. (4)

He proceeds to identify the root of the fragmentation of knowledge, as Newman did, with the loss of a theological horizon, an orientation to the transcendent. Hard

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<sup>11</sup> I recommend for further reading David L. Schindler, "Sanctity and the Intellectual Life", in *Heart of the World, Center of the Church* (Eerdmans, 1996), 203-20; Robert Barron, "The Nature of the Christ-Mind", in *The Priority of Christ* (Brazos, 2007), 153-88; Michael Hanby, "Trinity, Creation and Aesthetic Subalternation", in David L. Schindler (ed.), *Love Alone is Credible* (Eerdmans, 2008), 41-74.

though it may be for a secular university to admit the fact, there is a narrowing and a degeneration of reason implied in the relegation of theology and metaphysics to the level of any other discipline. He writes:

Complex systems of thought have thus been built, yielding results in the different fields of knowledge and fostering the development of culture and history. Anthropology, logic, the natural sciences, history, linguistics and so forth—the whole universe of knowledge has been involved in one way or another. Yet the positive results achieved must not obscure the fact that reason, in its one-sided concern to investigate human subjectivity, seems to have forgotten that men and women are always called to direct their steps towards a truth which transcends them. Sundered from that truth, individuals are at the mercy of caprice, and their state as person ends up being judged by pragmatic criteria based essentially upon experimental data, in the mistaken belief that technology must dominate all. It has happened therefore that reason, rather than voicing the human orientation towards truth, has wilted under the weight of so much knowledge and little by little has lost the capacity to lift its gaze to the heights, not daring to rise to the truth of being.... A legitimate plurality of positions has yielded to an undifferentiated pluralism, based upon the assumption that all positions are equally valid, which is one of today's most widespread symptoms of the lack of confidence in truth. (5)

What we need, in order to develop a vision of man and of the cosmos in which modern science – which has outgrown the medieval model of the world – will also have room to grow and flourish, is what John Paul II describes as

“a philosophy of *genuinely metaphysical* range, capable, that is, of transcending empirical data in order to attain something absolute, ultimate

and foundational in its search for truth. This requirement is implicit in sapiential and analytical knowledge alike; and in particular it is a requirement for knowing the moral good, which has its ultimate foundation in the Supreme Good, God himself.... Wherever men and women discover a call to the absolute and transcendent, the metaphysical dimension of reality opens up before them: in truth, in beauty, in moral values, in other persons, in being itself, in God.” (83)

The Pope is very clear, however, that this does not imply the rulership of theology over the other disciplines. Instead, he describes a reciprocal relationship of mutual respect. In his letter to Fr George Coyne of the Vatican Observatory in 1988, he writes that “So much of our world seems to be in fragments, in disjointed pieces. So much of human life is passed in isolation or in hostility.” At the same time, “The unity we perceive in creation on the basis of our faith in Jesus Christ as Lord of the universe, and the correlative unity for which we strive in our human communities, seems to be reflected and even reinforced in what contemporary science is revealing to us. As we behold the incredible development of scientific research, we detect an underlying movement toward the discovery of levels of law and process which unify created reality and which at the same time have given rise to the vast diversity of structures and organisms which constitute the physical and biological, and even the psychological and sociological worlds.”

One of those attempts to “unify created reality” is, of course, the theory of evolution by natural selection. In the eyes of many it explains how the entire complex universe must have developed from a very simple beginning without divine interference. John Paul II was open to the theory, but not when it claimed to account for absolutely everything. While the theory may offer explanations for the historical development of things, organisms, societies and even patterns of behaviour and predispositions to certain beliefs, there is a very important

dimension that it leaves out of account entirely. That is the whole dimension of value, of goodness and beauty. Even truth is left out of account, in that evolutionary reasons can never suffice to explain why something is true or not, although they may try to explain why we are (psychologically) inclined to believe it. Certainly as Newman saw, the *authority of conscience* is inexplicable on an evolutionary account. And any account of the world that leaves out our own reflexive consciousness is certainly a theory of less than everything.

Thus the unity we seek between science and religion is not a simple identity. “Religion is not founded on science nor is science an extension of religion. Each should possess its own principles, its pattern of procedures, its diversities of interpretation and its own conclusions. Christianity possesses the source of its justification within itself and does not expect science to constitute its primary apologetic.” He concludes that “The unprecedented opportunity we have today is for a common interactive relationship in which each discipline retains its integrity and yet is radically open to the discoveries and insights of the other.” In fact “Only a dynamic relationship between theology and science can reveal those limits which support the integrity of either discipline, so that theology does not profess a pseudoscience and science does not become an unconscious theology.” And philosophy, as he shows in the encyclical, has a key role in revealing those limits. That is why the healing of the university must begin with philosophy.

### **The Broadening of Reason**

How did our present conception of reason come to be so exceptionally narrow – that is, narrower than at any other time in history? The process has been analysed by a number of great thinkers, including Romano Guardini, Etienne Gilson, Henri de Lubac, Hans Urs von Balthasar, Richard Weaver and Louis Dupré. These writers trace the dissolution of the medieval synthesis to William of Ockham and the Nominalists in the 14<sup>th</sup> century. John Milbank takes a similar line but pins the

blame on another, slightly earlier Franciscan, Duns Scotus. The Nominalist tendency was to reject the reality of universals and regard the world as composed only of individual things on the one hand and God on the other. This led to a narrowing of the types of rational explanation from four to two – formal and then final causes were eliminated, leaving only material and efficient causes to account for (roughly speaking, what things are made of, and how one thing leads to another).<sup>12</sup>

In my book I drew upon the Canadian philosopher Charles Taylor, especially his book *A Secular Age*. There he shows in great detail how the ancient “cosmos” gave way gradually before the conception of a secular “universe”. The cosmos, he writes, “is a hierarchy; it has higher and lower levels of being. And it reaches its apex in eternity; it is indeed, held together by what exists on the level of eternity, the Ideas, or God, or both together – Ideas as the thoughts of the creator.”<sup>13</sup> A universe, on the other hand, though not without its own kind of order, one attributed to exceptionless natural laws,

is no longer a hierarchy of being, and it doesn’t obviously point to eternity as the locus of its principle of cohesion. The universe flows on in secular time. Above all, its principles of order are not related to human meaning, at any rate not immediately or evidently.<sup>14</sup>

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<sup>12</sup> In the ancient view, found in Aristotle, there are four main types of explanation or account that we can give for things: final, formal, efficient and material. The final cause is what they are *for* or what purpose they serve. The formal cause is the inner shaping idea that makes them *what* they are. Both of these types of explanation dropped out of view in modern science, leaving only the last two. The efficient cause is what brings something about, or makes it do what it does. The material cause is what it is made of. For St Bonaventure, efficient, formal and final causality echoed the power, wisdom and goodness of God in three Persons – Father, Son and Spirit. This point is mentioned in David L. Schindler, “Sanctity and the Intellectual Life”, in *Heart of the World, Center of the Church* (Eerdmans, 1996), 214 fn.

<sup>13</sup> Charles Taylor, *A Secular Age* (Harvard University Press, 2007), 60.

<sup>14</sup> *Ibid.*

For the ancients, the heavenly spheres are not moved mechanically, mindlessly, pointlessly by impersonal forces. They are

“moved by love, by intellectual desire, never sated because they can never completely assimilate themselves to their object, and never frustrated because they continually do so to the fullest extent which their nature admits or requires. Their existence is thus one of delight. The motions of the universe are to be conceived not as those of a machine or even an army, but rather as a dance, a festival, a symphony, a ritual, a carnival, or all these in one. They are the unimpeded movement of the most perfect impulse towards the most perfect Object.”<sup>15</sup>

I am quoting here from C.S. Lewis, whose studies of Medieval and Renaissance literature help us to understand many aspects of his better-known writings for children. **IMAGE 17** One of the most telling moments in *The Voyage of the Dawn Treader* comes when Eustace is introduced to a retired star, Ramandu. Rather puzzled, he remarks that, “In our world, a star is a huge ball of flaming gas.” Ramandu replies: “Even in your world, my son, that is not what a star is but only what it is made of.”

Modern physics has a very different notion of “substance”. Science wanted to know how things work and what they are made of, and became very effective in analysing exactly how one event leads to another, and how to take something apart into its constituent elements. But to investigate only what a star is made of and how it moves or changes, rather than why it does so, is to leave out the very *being* of the star. Why does the star exist? It exists to be a certain thing, as the expression of an idea or form in the mind of God, in order to fulfil a part of some harmonious

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<sup>15</sup> C.S. Lewis, “Imagination and Thought in the Middle Ages”, *Studies in Medieval and Renaissance Literature* (Cambridge University Press, 1966), 66.

design in which we too have a part to play. That is what lies behind Ramandu's comment. That is the religious and ancient perspective on things, and Lewis believed that in losing it we have lost something important to our humanity.

Associated with this shift in cosmology is a parallel one concerning the self. Our sense of our own identity has evolved from one that is intrinsically related to the rest of the cosmos, in a sense "porous" to it, to one that is isolated, the ruler of its own little kingdom, or in Taylor's term "buffered". He feels himself to be disengaged from the world around him, rather than intrinsically related to it (by family, tribe, birthplace, religion, or vocation). The typically modern person lives in a "disenchanted world." He is expected to forge his own destiny by an exercise of choice. He is concerned less with what is right than with what his rights are, or rather he grounds the former on the latter. The world for him is just a neutral space for his action, his free choice, and the greatest mysteries lie not outside but within himself.<sup>16</sup> Paradoxically, though, this turn to the subject, which was accompanied by a sense of liberation from external constraints, has led to a growing feeling of individual *powerlessness* in relation both to society at large and the vast shadowy depths of the unconscious within.

The historical process that Taylor describes is one that moves the focus of human thought from cosmology to anthropology, or from philosophy to psychology.<sup>17</sup> One way of describing it is this. In the older world God is represented by the cosmic order mirrored in the human microcosm. We live sheltered within an all-embracing union of God and nature, and our imaginative model of this cosmos

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<sup>16</sup> In Vol. 5 of *The Glory of the Lord*, Hans Urs von Balthasar writes: "During the Nominalist period the universe lost its theophanic radiance – the devout no longer encounter God outside but only within themselves. At the same time, the universe loses its hierarchic gradation and collapses into 'matter' which, itself without essence, becomes that which is merely mathematically calculable and which is present to be exploited by man" (p. 452).

<sup>17</sup> Cf. Barfield, *Romanticism Comes of Age* (Wesleyan University Press, 1966), 84-90, and H.U. von Balthasar, *Science, Religion and Christianity* (Burns & Oates, 1958), 12-27.

supports the act of contemplation. **IMAGE 18** From this we move to a world in which God is sought, if anywhere, within the human, within consciousness. Man becomes the measure of nature, its master, or even the goal towards which it is striving. But simultaneously, with so much weight is placed on the shoulders of man, he begins to buckle and dissolve, because no solid centre or identity can be found within. Modernity gives way to the anguish and irony of the postmodern. The search for “God within” ends in atheism, hedonism or the occult. This, you may agree, is a pretty fair description of the modern university campus – not yours, of course, but of many in North America.

Fortunately the historical process does not end there. We have moved from an age of cosmology to an age of anthropology. The process continues, and the road leads deeper into anthropology itself. The challenge of our time is to understand man, but to do so more adequately – man not as he appears after the Cartesian reduction as a mind that thinks, but as an “acting person”, a being “who knows other beings as true, who loves them as good, and who enjoys them as beautiful.”<sup>18</sup> A person is no mere individual atom, or collection of atoms, as materialism would have it. Nor is a person simply a mind or soul temporarily housed in a body, as dualism assumes. Nor is the body an illusory projection or construction of the self. This ensouled body that we are cannot be understood in isolation from God and from other human beings. Thus is man seen against the theological horizon. We can only see the world as a unity, as a whole, if we view it in relation to that which

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<sup>18</sup> Etienne Gilson, *The Unity of Philosophical Experience*, p. 255. The human person responds to these values at the three levels of the organism (body, soul and spirit): beauty with the heart, goodness with the will, and truth with the intellect. According to Christopher Alexander (*The Nature of Order*), subjects who disagree which of two objects are most “beautiful” will suddenly show a remarkable degree of agreement when asked instead, “Which of these two objects would you prefer to spend eternity with?” or “Which would you prefer to offer to God?” The reason is, surely, that the question causes us to give the object our full attention, so that we begin to respond to it as a whole and with our whole selves.

transcends it – ourselves included. John Paul II puts it like this: “One cannot think adequately about man without reference, which for man is constitutive, to God.”<sup>19</sup>

There is a wonderful passage in John Paul II’s encyclical on the Holy Spirit (*Dominum et Vivificantem*, 50) where he lifts his eyes to this horizon and shows us the interconnectedness of all things in Christ:

“The Incarnation of God the Son signifies the taking up into unity with God not only of human nature, but in this human nature, in a sense, of everything that is ‘flesh’: the whole of humanity, the entire visible and material world. The Incarnation, then, also has a cosmic significance, a cosmic dimension. The ‘first-born of all creation,’ becoming incarnate in the individual humanity of Christ, unites himself in some way with the entire reality of man, which is also ‘flesh’ – and in this reality with all ‘flesh,’ with the whole of creation.”

The key to all the sciences is man, the human person, read in the light of revelation, which alone does justice to our experience of being and love. We may not be aware of the light’s source, but it is in the outline of the figure of Christ that the rays converge. **IMAGE 19** There the metaphysical fracture between subject and object is healed without either being absorbed into the other. God is the one who reconciles, the one who unites the self and the not-self, the observer and the observed. The beauty which we see in Christ is the revelation of ultimate form and meaning in the cosmos, the music of the heavens.

We wonder in awe before the beauty of creation, and its staggering complexity. What evokes wonder in us is an awareness of the mystery, the fact that all things are saturated with meaning, but a meaning “too rich and full for the eyes of the

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<sup>19</sup> John Paul II, *Crossing the Threshold of Hope* (London, 1994), 35-6 (italics in the original).

mind to master at a single glance”.<sup>20</sup> Reality is dazzling; it is full of radiance, the radiance of beauty. And yet our capacity to respond, to see the light welling up from the depths, to be aware of the mystery, requires something of us. It requires us to resonate with that mystery, so that there is something in us that resembles it, something connatural with it. That capacity, that depth, is opened within us by the experience of love, in the moment when we understand ourselves to possess a meaning and destiny of our own. Until that moment we have no way to connect with the beauty that we see.

Education begins in the family and ends in the Trinity, beginning and ending in an experience of love which is the birthplace of wonder. The integration of the curriculum should mirror the integration of man, making the connection between the beauties of creation and the mystery of our own personal being. The search for beauty is therefore the key to the healing of the University, and the healing of our relationship with creation – not truth alone, not goodness alone, but the beauty which moves us toward truth and goodness, and which cannot be separated from them because all three are aspects and expressions of the same love.

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<sup>20</sup> Carl Anderson and Jose Granados, *Called to Love: Approaching John Paul II's Theology of the Body* (Doubleday, 2009), 7.