



# BULLETIN

DATE: SUMMER, 2002

VOL: 33 NO. 3

We are now well into "ordinary time" in the Christian calendar. Does that give us "permission" to relax a bit in our apostolic work? In one sense it does; we need a bit of relaxation in these troubled times. In a different sense we cannot take "time off" from spreading the Word of God to those about us.

So what can we do with these multiple duties and relaxation? It is incumbent on us to work and to relax. This is true of the ITEST staff as well. We have several initiatives we are attempting at present, trying to ensure the financial viability of the group and also to recruit new members. Many of our really long-term members have died in the last few years. This is certainly not a condition in which to ensure the future of the group. We have often written that each member recruiting one other would double the size of the group. That is still true. Recently we launched a campaign to gain many people who should be members - but aren't because they have yet to hear of us. We'll have more to report on this effort later.

We have also begun an effort to raise money which will soon be necessary to keep the group running more or less smoothly. We are attempting to raise \$50,000 from the membership of the group. Whatever you can contribute would certainly be appreciated. If you have any ideas on fund-raising or on increasing our membership, please let us know. We are more than a small club that meets to talk. We are an important apostolic tool in the hands of the Church. We are only at the beginning of the mission of the scientist and technologist in the Church. We pray we do the work well.

By popular request we are reprinting in this issue Chapter Four of the now out-of-print volume, *The Vineyard*. It represents a brief discussion of the apostolic nature of our lives in the Church. Also, we are re-printing a paper written by Father Bert Akers, SJ, about ten years ago. Our problem with Bert is that we have been unable to tap into his fertile imagination more often. Maybe we can speed him up a bit by reprinting this article.

Finally, let us relax, but still care enough about the faith/science work to do some thoughtful meditation on the future of ITEST. In the meantime, let us rejoice in the Lord who gives us life and sustenance.

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## ANNOUNCEMENTS

1. Fr. Vincent E. Krische, a longtime, supportive member of ITEST will receive the Catholic Campus Ministry Association's *Rev. Charles Forsyth Award*, given each year to a campus minister who has had a significant impact on campus ministry at the local, regional and national levels. We congratulate Fr. Vince and wish him many more fruitful years in the ministry with young adults. He directs the St. Lawrence Catholic Campus Center at the University of Kansas, Lawrence and has pioneered efforts in broadening the whole scope of campus ministry, especially in the area of science and faith.

2. Fr. Bob Brungs, SJ, ITEST Director, was one of several Jesuits recently interviewed by the BBC Radio 4 on the topic of "Science and the Church." Also interviewed were Fr. George Coyne, SJ, Director of the Vatican Observatory and members of the Pontifical Academy of Science. The program aired 8:00 pm, April 30 (British time) -- 2:00 pm, US time. The BBC will provide an audio tape of the half hour documentary highlighting Jesuits working in the

area of science and theology. Questions posed to Fr. Brungs focused on the relationship of faith to science and the purpose and goals of ITEST.

3. Please send in your registration as early as possible for the September 27-29, 2002 workshop, "Advances in Neuroscience: Implications for the Christian Faith." This topic has evinced great interest both in the medical and related fields. If you have not yet received registrations materials (invitation brochure) to the workshop, and you are planning to attend, please contact us as soon as possible via e-mail or phone (see front page).

4. We have mailed the third renewal notice for calendar year 2002. Those who have not renewed since 1999 will be dropped from the list. We urge you to renew. Only those members who have renewed for 2001 and 2002 will receive the latest book of proceedings on genetically modified food, *Genetics and Nutrition: Some relatively unexplored considerations*.

## A WORD FROM OUR CREATOR REDISCOVERING NATURE AND NATURE'S GOD

Father Bert Akers, S.J.

[*Father Akers began graduate work in political science at Saint Louis University and completed Doctoral Studies at the University of Innsbruck, Austria and Woodstock College, Maryland. For many years a producer of religious Radio and TV programming, he is in pastoral work in the District of Columbia. Father Akers now explores the crises in education, Church and society as a "clash of symbols." He sees an ever increasing conflict between the fundamental "belief-systems" of the secular and sacred worlds. This article is reprinted from Some Christian and Jewish Perspectives on the Creation, ITEST Proceedings, March, 1991.*]

### ABSTRACT

The secular world is strangely touchy about the topic of Creation. The greater the achievements of Science, the more Nature reveals a breathtaking "given-ness", threatening the complacency of the past four centuries. Wonder is not yet worship, and religious answers are officially disbarred. But the perennial questions cannot be. Do such astonishing "givens" as we daily discover make it more or less credible that there is also a Giver?

Idol or Icon? True Man or manikin? *Theos* or *Theios*? One iota of a difference. Could it possibly matter? It did. It does.\* To the fevered mobs reeling through the streets of Byzantium, Damascus, Jerusalem, rumbling by torchlight on the back lots of Alexandria and awaiting late reports from the current doctrinal war, nothing could have mattered more. We think it altogether strange, barely credible, untroubled as we usually are about ultimates and absolutes

and theological niceties. Except of course when it comes to this business about Creation.

Unlike practically any other philosophical or theological topic in our society, Creation has always had a way of making the News. There was the celebrated Monkey Trial. But only recently a highly respected writer was fired from the *Scientific American* when they found out that he accepted Creation: the assumption was that this would make *scientific objectivity* impossible. Fundamentalists and the textbook publishers are always at it. Natural History museums show us in amazing detail the *Artist's Conception* of any and every Missing Link. There is no hint of a Missing Creator.

### MUCH ADO ABOUT SOMETHING

Maybe the fact that as Teachings of Faith go, Creation does seem to have a certain directness about it. Almost



inevitably as presented in the popular Media, it does become confused in a jumble of religious, philosophical and scientific misunderstandings. But there is a certain Either/Or quality about it that is refreshing. Exclusivity, as everyone knows, is out. Both/And is in. Bridging the polarities. It made President Truman long for a one-armed economic advisor who could not say "On the one hand, but on the other." Inclusivity is in. But every now and then, out of the penumbral fog, one of the great classic formulas reassuringly will gleam with a hard and gemlike radiance.

Hydrogen was recently defined on a Public Television program about the Living Universe "as a colorless, tasteless, odorless gas which, given enough time, becomes people." The definition is certainly tasteless and colorless enough, though hardly odorless.

But even by those standards the Master of the Universe put His own special spin, as they say, on Reality: "It is if I say it is." We're one very lucky bunch of atoms just to be talking about it. Whatever *is* belongs to a very exclusive club.

Even the least theological of journalists can stretch to see that besides *nihil* and *aliquid*, there is no third option (*non datur tertium*). No stuff-out-of-which either. Strictly from scratch. Not a little something left over in the great Fridge. Nothing. There was Nothing. *Then* there was something. *Creatio ex nihilo*. And just to make sure, the Greeks and later the Scholastics packed down the idea, like a shaped charge, that there was a stage (not yet *Time*) when nothing at all existed: "There was" they said, "when there wasn't!"

That kind of directness attracts attention even today. Because there are few voices with that kind of sureness, authority, conviction, courage. And isn't Religion, most of all, supposed to be caring and sharing and Inclusive? Personal, subjective, sweet and soft, with the doctrinal firmness of a Hallmark card? And the last thing in the world to be unpleasant about! Just the opposite is, of course, the case. There are a thousand angles at which the tower will fall; only one at which it will stand. And the omission of that famous *iota* would have toppled all steeples of Christendom. It might just be that the stark simplicity of this doctrine may touch some long-dormant sense of what Orthodoxy really does mean. The stakes are very high.

#### A WORK-IN-PROGRESS

Every religious Truth has enormous implications for our world. But none is associated in the popular mind, as Creation invariably is, with all the dramatic unfoldings of the Space Age: with Black Holes, Anti-matter, Evolution, Intelligent Life, and a Mother of All Molecules (DNA) for

the human family. Yesterday's Sci-Fi is today's Eyewitness News. Moonwalks. Space walks. Star Wars. Spaceship Earth. Spiritually we are all Trekkies.

Within a generation we've learned to think in vastly different scales of Time and Space. Numbers once reserved for McDonald's beef ("Billions Sold") and Congressional pork ("A billion here, a billion there, next thing you're talking real money.") are used handily to talk real galaxies and real years. Fifteen billion of them since the Big Bang. And all recorded history, Carl Sagan reminds us, represents the last seconds of the last day of the last month of a *calendar year* since the Big Bang happened (*The Dragons of Eden*, p. 11 ff).

He also reminds us in passing that the two scales we use, one for the observable Universe (a 1 with 24 zeros); and Quantum Mechanics for things about a millionth of an inch small are "inconsistent with each other: they cannot both be correct." (Sagan on Hawking's *Time*, p. 9). As once was true of miracles and mysteries in the ages of religious Faith, a thousand difficulties do not make a doubt. Until recently we have been largely untroubled and unquestioning within this scientific and secular *faith*. That may be what is changing.

It is impossible to imagine that all of this is not having its effect on our psyches. But how much of this translates into a sense of philosophical wonder or religious awe seems very hard to say. Limitation, frailty, vulnerability, yes. Aloneness, thrownness, lostness, certainly to some new degree. The other questions, the classic ones: how did it get here? what are we doing here? what's it all *for*? Is there God? By tacit agreement such questions are hardly ever raised in public.

There are concerns and you take your choice: the earth is warming and the sun is cooling. Not to worry, things may work out: since the earth (slowing) is getting near the sun at the rate of about a centimeter per century. We are almost certainly more aware of the splendors and wonders of our world than any generation before us. There is surely less arrogance and scoffing, probably more sense of mystery and kinship with all *Creation*: a work-in-progress, but not clearly a *work of His fingers*.

#### PLACARDS IN THE PARK

Actually it may well be those picketers in the park can best help us understand how we got this way. Wrong they well may be on the issue. But they are dead right as usual in sensing the critical importance of the issue, the children of this world being street-wiser about this sort of thing. Whatever form it may take, civil liberties, academic freedom, whatever, the real issue is the same Old Enemy. Incredible to these sons and daughters of the Enlightenment



that the bony old hand keeps popping up through the leaves. O well, they say. Let's do it right this time. *Ecrasez l'infame!*

It's a strange lot, the protesters and demonstrators and lobbyists. A roundup of the usual suspects. The crowd you can always count on for political action when there's trouble in the Secular City. They understand as did their predecessors in the parks of Chalcedon and Nicaea, that Truths have consequences. Still, why Creation? With so many unpalatable religious affirmations to choose from, in a society so largely unaffected by religious teachings anyway, why make a such a public to-do about this one?

Almost certainly because they sense that something altogether crucial is at stake here. It has to do with God and Revelation and the Church, with Education and pluralism, and the Great Wall of Separation. Only far more fundamental. It has to do with Meaning and the Material world. It has to do with Intelligence and Intelligibility. It has to do with Nature. And, one might cautiously assume, with Nature's God.

#### THE BOOK OF NATURE

Kierkegaard observed that the only way to understand our lives is to trace them backwards; but that unfortunately we have to live them forwards. The West lived so long off the accumulated riches of the classic and Judeo-Christian inheritance that it has taken centuries to achieve a kind of spiritual bankruptcy. Conversely, for us, after four centuries of conditioning, it is hard for us to imagine how our modern way of looking at *Nature* could ever have been otherwise. Not very different from our everyday lives; because most people live rather sanely in their world. But very different from our *theory*: from the sort of *explanations* offered in the textbooks.

#### NATURE'S VOICE

How do we know the fire is hot? To say it *tells* us so is neither projection, nor poetry, nor anthropomorphism. Reality *speaks* by being and doing. "Each mortal thing does one thing and the same. . . Crying what I do in me: for that I came." (Gerard Manley Hopkins, Poem 57\*\*) No sane philosophy ever doubted it. It is in fact the ultimate criterion for sanity. In philosophy and in people. Reality therapy means looking at, listening to, Reality.

None of the great philosophies ever doubted that things *expressed themselves* by the very fact of being themselves. Their question was rather the mystery of it all. How it could it be? whence it came? where it might be found in its purest expression, this inner intelligibility of things? The universal Exemplarism of Plato, and above all the Greek understanding of the *Logos* made possible a synthesis in

which the Alexandrine Jews, the Fathers of the Church, and Christians for the next thousand years took it for granted that all creatures, great and small, glorified their Creator, each with the voice of its very nature.

For Bonaventure, "The created world is a book wherein we may read the creative Trinity. It is a resplendent mirror showing forth the wisdom of God" (Lacroix, p 26f). For him and for all Christians, the *Logos* made Flesh, itself the Symbol, the Sacramental Center of the Cosmos, brought about the unity of all things, visible and invisible, in Christendom.

The Finger of God (*digitus Dei*) was not only there (quickenng Adam in Michelangelo's great mural), it left traces, patterns, impressions, calling cards (*vestigia Dei*). If we can tell in an instant that it was John who parked the car and Aunt Flo who made the soup, is it conceivable that things so splendid, so unlikely, so funny, would bear no mark of their Maker.

What is *Nature*? Nature according to Thomas is that:

*ratio cuiusdam artis, scilicet divinae, indita rebus, qua ipsae res moventur ad finem determinatum.*

The standard translations are not good:

The reason of a certain art, namely, the divine, written into things, whereby they are moved to a determinate end. (*In II Physics* lec. 14. Cited by McCoy, p. 163.)

Despite the translation, what shows through is a theology, a spirituality, a prayer and a hymn of praise. It is also the kind of real philosophy anybody's uncle could say "Yup" to with a lot of understanding. But it is nearly impossible to translate into English for the very reason that we are talking about here: the severing of our metaphysical roots. Roughly, Nature is the very design, meaning, essence, structure that the maker's art, skill, know-how, builds right into things (a wrench, a light bulb); by reason of which (design, structure, etc.) things do what they are designed to do, achieve the purpose they were intended for (tighten bolts, light the room). In the case of things not made by us (the sheep, the rose) it is the Divine Artist who puts that *Nature* into things, that power by which they are themselves, *do their own thing*, and achieve their purpose and that of the Artist who made them.

Not without reason the changed relation to Nature in modern Science and Philosophy almost perfectly parallels the very concept of the "artist," human and divine.

#### THE MODERN SPIRIT



The change was barely perceptible, at first. Most of the early modern scientists were Believers. Often their scientific quest was scarcely distinguishable from their reverential awe of God's handiwork. Each puzzle solved only led them to greater admiration for the *Mind of the Maker*. Above all they were astounded at the correspondence between the way things worked and the mathematics that first explained what happened and then predicted what would happen, what in fact would have to happen.

The *Laws of Nature* seemed to take care of everything. But for that very reason the sense of mystery gradually diminished. And of course the more admirable the machine, the less need for maintenance, let alone for the Inventor to be hanging around. Not that God was honored less, but that Nature was honored more. So the Creator became at best the God of the Deists, the God of the Philosophers.

As is so often the case, it is the poets, like canaries in the mineshafts, who first express alarm. None were more prescient or more uneasy than John Donne:

And new Philosophy calls all in doubt,  
The Element of fire is quite put out;  
The sun is lost, and th'earth, and no man's wit  
Can well direct him where to looke for it...  
'Tis all in pieces, all cohaerence gone;  
All just supply, and all Relation...  
For the world's beauty is decayed, or gone,  
Beauty, that's color, and proportion.

The metaphysical experience of contingency, stupefying wonder that the Great Clock of the Universe was running so well, or existed at all, was fading fast. Asked by Napoleon where God would fit into such a perfectly functioning Universe, LaPlace gave his reply: "I have no need of that hypothesis." LaPlace would not be the last among the great mathematical and scientific minds who seem to find it almost impossible to distinguish computation from causality. We hear it continually in explanations about Relativity, Quantum Mechanics, Randomness, Chaos. We are taught that the earth's axis is *off*, or its speed or orbit not exact. It is a very understandable mistake, an occupational hazard. But it's a Faustian slip if there ever was one.

Both Aristotle and Thomas had taught that the mode of the natural sciences must be *dialectical*, inquiring, with reserve and tentativeness, because we are not, after all, the *artists* who made these things. Far different is the spirit of the *New Learning* which sees that Knowledge is Power. Now instead of just listening to Nature, letting her *speaking*, we should put her on the rack and make her tell us what we want to hear.

So obvious today. But it was clearly both shocking and

exhilarating to the early modern mind. Even for an Immanuel Kant. We can still hear the fascination in this passage which provides exceptional insights both into the methodology of the sciences and the psychology of the modern soul:

It is hypotheses, then, that our reason produces after its own design, and compels nature to reply to [the *rack* theme, by then a commonplace].

When experiment confirms our hypotheses, we are flattered to find ourselves *artists*, as it were, who have made the *designs* which we recognize in nature. But the reason for this is that we increasingly share *in the divine art by which the universe is made*. [Italics author]. (Preface to the 2nd Edition of *The Critique of Pure Reason*. Cited by McCoy, p. 162).

The view does indeed begin to look familiar, though probably not from this angle. In classic and Christian philosophy *knowing* (theoretical, speculative science) was the highest occupation; then *doing* (the exercise of virtue); then *making*. But the modern spirit finds that being an *artist* is far more fulfilling (*flattering*) than contemplating the works of the Creator.

What is all important is that this spirit is by no means confined to the natural sciences. In the Arts, creative genius becomes a law unto itself. With Machiavelli, Politics, once the highest exercise of Virtue becomes pragmatic professional technique (both lion and fox, knowing how to be bad as well as good). Not even the traditional Common Good is any longer the norm, but an arbitrary goal established by the Artist/Ruler. Form and Finality, *Nature in her givenness*, all is melting away. This time Tennyson:

O Earth, what changes hast thou seen.  
There where the long street roars, hath been  
The silence of the central sea.  
The hills are shadows. For they flow  
From form to form, and nothing stands.  
They melt like mist, the solid lands;  
Like clouds they form themselves  
And go....

So that in its final stage, it is not a question of any sort of further *desacralization* of Nature. But rather its denial. In what would seem to be in obvious contradiction to the very object and dynamism of Science, a denial of fixity, of form, of causality, of certitude, objectivity, meaning itself.

The problem is not really that mountains, thought to be the very symbol of permanence are peaking and troughing like waves; that there is more *space* than *solid* in Professor Eddington's famous table (nor thereby any less a *Table*);



or that the cellular structure of the mongoose has *any* bearing on the philosophical meaning of its soul, animating principle, organic Form, Nature.

Agreement (or even disagreement) is difficult since the frame of discourse has been so long neglected. But the problem is almost certainly deeper, a thing of the spirit rather than of the mind. It will not accept *Nature* because it feels that it cannot, whether for reasons of pride or self-respect, accept the givenness of things.

Cannot accept being given, gifted, graced. It is not *flattering*. And then there is always the worry that where there is the *given*, there may also be a Giver.

#### POST-MODERN WORLD

It is no longer the age of purely *objective* Science in the distorted sense. We are much more aware of how much we do indeed *structure* our world, whether the symbol-system we use is that of myth or metaphor or mathematics. That is just another way of saying that we are living in the *post-modern* world.

Science is rightly esteemed. But the mood has changed. It is the age of Hi-Tech. But also of Hi-Touch. It is the age of The Person. And no message will sound like *Good News* to men and women today if it does not contribute to *being a person* -- whatever that may turn out to be. But with *Person* we are drawing very close to the greatest of the Mysteries. *All things* the Fathers used to delight in point out, "are created in God's Image; but only of Man and Woman is it written that they are made also in His Likeness."

And here, in the coming age, our differences from the secular world may grow more apparent. The enlightened secular may realistically doubt that all human needs and desire will ever be satisfied; but seems very confident in knowing what those needs and desires are. The believer is not entirely sure what the depths of his mind and the hollows of his heart are aching to be filled with; but he has no doubt that filled they will indeed be, pressed down, heaped up, and running over. "I shall make them drink the torrent of my pleasures!", saith the Lord who telleth it like it is.

It is not a question of disinterring *that old-time religion*. The gifts are not lacking. We have scarcely begun to open them yet. If we do, we will find them consonant with our greatest hopes and aspirations. Only greater. Greater than our hopes, our logic, our hearts.

For the Theology of Creation, of the Image, and of the Logos is centered on the culmination of all *Nature*: which is Person. It is not as splendid *thing* but uniquely as *person*

made in His very Image and Likeness that we are:

#### HEARERS OF THE WORD

God stands in need of nothing, we would say, protecting the divine sovereignty. But for the modern person, it's not much fun trying to relate to someone who stands in need of nothing. And protecting His sovereignty hardly seems what He was about. Since we are here, it seems much more likely that He wanted somebody to talk to, maybe even talk with. Maybe we're not listening.

#### SPEAKERS OF THE WORD

In what are we more like Him than in His creativity? Like the Divine Artist, we too have the *creative word* that constructs, fashions our world. Not in *words* only but everything we do, creating our world, creating ourselves. So it is that we are the Lords, *having dominion*. That we are the Scientists, *naming the animals*, knowing their natures. Artisans. Charged with *keeping the earth and working it*. Collaborators with God.

#### SHARERS OF THE SELF

Finally we have learned that the ultimate expression of the Self is the gift of the Self. That's the ultimate *word* that can be spoken. Amazing, as the old joke had it, how much Our Father seems to have learned in such a short time. St. Paul keeps asking what did God know and when did He know it. But the evidence is overwhelming. He knew all along, Paul concludes, planned the whole thing. *That* was the *Mysterion* hidden from the beginning. Even then. The Word was with God. The Word was God. The Word was made flesh and dwelt amongst us.

But we will need the grace of asking for the grace of accepting the gift. And so we pray:

Adjutorium nostrum in nomine Domini.  
Qui fecit coelum et terram.

Our help is in the name of the Lord.  
Who made heaven and earth.

#### ENDNOTES

\* In the Arian controversy, finally settled dogmatically at the Council of Nicaea in 325 AD, the difference between orthodoxy and heterodoxy literally was the difference of an iota: is Christ Jesus *theos* (God) vs *theios* (God-like) or *homoousios* (of the same substance) vs *homoiousios* (of like substance) as God? As we know, the Fathers at Nicaea proclaimed Christ as *theos, homoousios*.

\*\* Citing Hopkins is always a problem because many of



his poems have no "titles." This famous poem is often referred to by its first line ("As kingfishers catch fire...") This standard numerical reference is from *Poems of G. M. Hopkins*. W. H. Gardner (ed.). Oxford University Press. Third Edition, 1956.

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## THE TASK OF ALL CHRISTIANS

**Dr. Eva Maria Amrhein**

**Fr. Robert A. Brungs, SJ**

*[This is the fourth chapter from the out-of-print volume, The Vineyard: Scientists in the Church, published by the ITEST Faith/Science Press in 1992. Some things are worth saying again -- after ten years. Dr. Amrhein has her PhD in Solid State physics and worked for some time in the United States on non-crystalline solids, microwaves and sub-mm spectroscopy. At present Dr. Amrhein resides in Germany and is in the administration of her institute, the Schoenstatt Sisters. Fr. Robert Brungs, SJ, also a solid-state physicist, is the Director of ITEST.]*

The enfleshment of the Son of God has determined the future of the universe, not in some totally determinate and necessary way but in freedom. *Process* has become the servant of *event*. Currently, we are in a position to alter the evolutionary scheme of things in a deliberate (and hopefully careful, thoughtful and loving) way. The future is free in terms of the direction which we human beings wish to take. It is not *necessary* that we proceed in one way only, as if no other ways were possible to us. This is not to say that we can ignore the structures and limits of the universe. Freedom does not imply that we can do anything we want simply because it looks like a good idea at the time. Along with our freedom comes the responsibility to use it for good, not just to satisfy our whims or to enforce our desires on others, be it the cosmos or other human beings.

Certainly we have nowhere near the capability to enforce our wishes on the universe, although we can alter some tiny parts of it. We are in a position, of course, to wreak serious havoc on our planet and its occupants, although probably not as much or with as longstanding an effect as we believe. Clearly, because of our ability to wreak havoc on what we touch, we must be aware that our conscious and conscientious union with Christ in the church is a vital part of *process*. If we are engaged in bringing the developing cosmos to its full destiny in Christ, we must strive to understand as fully as we can what Christ wants it to be. Granted that this is shrouded in mystery (and will be until Christ returns to us), we still must work toward a greater understanding of the end he desires and of the means appropriate to that end.

At the same time that we are gaining the ability to direct our own evolution and that of other living species (either through deliberate alteration, carelessness or exploitation), we should recognize that we do not have the sole responsibility for the cosmos (though we are still responsible for our actions or lack thereof) nor are we to surrender our freedom in some act of cosmic piety whereby we forswear all human activity in favor of protecting the "natural" status quo. We have neither cosmic responsibility nor must we submit to cosmic requirements, although clearly we must abide by some basic restrictions (limits) on what we try.

For instance, we can fly from city to city or continent to continent, but we cannot repeal the law of gravity. We cannot build systems that ignore it. Yet, with the expenditure of energy, we can manage within it. We are not responsible for the law of gravity nor must we bow before it. The same is true of other laws in other systems. We can violate the laws of nature, but we have to pay the price for so doing, whether that price be starvation or plague or, in some dire cases, the extinction of some or all living systems. But we cannot abrogate them. We obviously cannot live successfully for any period of time outside these limits.

We must, then, observe the structures of the universe. We can be free only within a structure, within some ordered pattern. There is no freedom nor any chance for freedom in anarchy. Human freedom and human love can flourish only if there is a realistic sense of the limits of our being and of the universe. This is something that we Christians in science and technology can help provide. We must carefully foster a realistic sense of cause and effect and not seek after some kind of gnostic wishful thinking. One of



the most formidable contemporary challenges to a realistic appraisal of cause and effect is what Eric Vögelin has called the Gnostic dream world:

In classic and Christian ethics the first of the moral virtues is *sophia* or *prudentia*, because without adequate understanding of the structure of reality, including the *conditio humana*, moral action with rational coordination of means and ends is hardly possible. In the Gnostic dream world, on the other hand, nonrecognition of reality is the first principle. As a consequence, types of action which in the real world would be considered as morally insane because of the real effects which they have will be considered moral in the dream world because they intended an entirely different effect. The gap between intended and real effect will be imputed not to the Gnostic immorality of ignoring the structure of reality but to the immorality of some other person or society that does not behave as it should behave according to the dream conception of cause and effect. The interpretation of moral insanity as morality, and of the virtues of *sophia* and *prudentia* as immorality, is a confusion difficult to unravel. And the task is not facilitated by the readiness of the dreamers to stigmatize the attempt as an immoral enterprise....

Gnostic societies and their leaders will recognize dangers to their existence when they develop, but such dangers will not be met by appropriate actions in the world of reality. They will rather be met by magic operations in the dream world, such as disapproval, moral condemnation, declarations of intentions, resolutions, appeals to the opinion of mankind, branding of enemies as aggressors, outlawing of war, propaganda for world peace and world government, etc. The intellectual and moral corruption which expresses itself in the aggregate of such magic operations may pervade a society with the weird, ghostly atmosphere of a lunatic asylum, as we experience it in our time in the Western crisis.<sup>1</sup>

More than developing an appropriate feel for the real structures of the cosmos, especially those limits that are beyond solely quantitative definition through scientific discovery, we must be able to formulate honest (and real) ideas of cause and effect. As Vögelin maintains, we are living in a Gnostic world. We need not only establish the true limits of human action in the cosmos, we must be realistic in our response to them. It is not enough, for instance, to work to discover the interconnectedness of physical systems; although necessary, it is not sufficient.

We must also develop ways to make our behavior conform

to that interconnectedness in a free manner, not as slaves to brute physical reality or to our current understanding of it. We can modify things so long as we keep their interrelatedness to other things in mind. But, as in politics, good intentions are not sufficient. They must be in conformity to what really exists and how reality interacts among its parts. The task facing the Christian today, perhaps especially the Christian in science and technology, is the discovery and interpretation of the reality of the cosmos. The discovery relies very heavily on scientific and technological advance; the interpretation relies on the philosophy and theology of the interpreter. It is profitable here, we think, to look at general ways in which the interpretation has been done and how Christianity interprets the reality.

Historically, there are two major non-Judaeo-Christian interpretations of the world around us: we may for convenience call one *animist* and the other *secularist*. Each, of course, comes in different shadings and nuances, as one would expect. In general the former sees the material world as moved by animate guardians; the latter sees it of no value in itself -- merely as something out of which to make something else that we do value. It is easy to caricature these positions, but in a general way they serve as two interpretations of reality.

In Greek mythology and even more so in the more ancient paganisms the forces of nature were personified. There were gods, goddesses, nymphs, centaurs and other mythological beings associated especially with a place. Only later in the life of Greece and Rome did these become associated with immorality. The peculiarity of Latin pagan mythology may be roughly covered by saying that, if mythology personified the forces of nature, Roman mythology personified nature as transformed by the forces of man. For the Latins it was the god of the corn and not of the grass, of the cattle and not the wild things of the forest; in short the cult was literally a culture, as when we speak of it as agriculture. The human element was very much a part of it -- the household gods, if you will, needed a household, a product of human technological skill. In a way this was the beginning of a development of the earlier sacrality of nature to include an element of the human. Thus, leaving aside the immorality that later (one may say, almost inevitably) became a part of classical paganism, Roman paganism exemplified the best of the ancient world by incorporating the human being and human activity into mythology.

At the same time, there was another form of paganism, really a precursor of today's secularism, flourishing on the southern shore of the Mediterranean Sea, the paganism of Phoenicia transplanted to Carthage. As G. K. Chesterton noted in his book, *The Everlasting Man*:

In the New Town, which the Romans called Car-



thage, as in the parent cities of Phoenicia, the god who got things done bore the name of Moloch, who was perhaps identical with the other deity whom we know as Baal, the Lord. The Romans did not at first quite know what to call him or what to make of him; they had to go back to the grossest myth of Greek or Roman origins and compare him to Saturn devouring his children. But the worshippers of Moloch were not gross or primitive. They were members of a mature and polished civilisation, abounding in refinements and luxuries; they were probably far more civilised than the Romans. And Moloch was not a myth; or at any rate his meal was not a myth. These highly civilised people really met together to invoke the blessing of heaven on their empire by throwing hundreds of their infants into a large furnace. We can only realise the combination by imagining a number of Manchester merchants with chimney-pot hats and muttonchop whiskers, going to church every Sunday at eleven o'clock to see a baby roasted alive.<sup>2</sup>

*(The authors highly recommend pages 145-151 of The Everlasting Man. In it we detect the kernel of much that must be said about both ancient and modern understanding that forms our perceptions of the world and our place within it -- and also just for the sake of Chesterton's language here. We feel that it may produce a sense of consonance. There is much in it that clearly relates to 20th century western understanding of our world and the elements that make up that understanding. It adumbrates many of the propositions that agitate the western approach to reality. We should look at them in the shadow of the Punic Wars as described by Chesterton and in the shadow of the Cross.)*

We can easily see in the west today commercial frames of mind similar to Chesterton's comments on Carthage. In some of the environmental *Green* thought and in the New Age movements, we can catch a whiff of spirits lurking behind the waterfall or living along the rivers or piping in the forest; there is certainly an element of *Pan redivivus* in much of contemporary thought (also in some so-called Christian theology in some cases) about the environment and about creation in general.

In our opinion, science as we know it will have a hard time fitting into a world dominated or even inhabited by Pan. This would get us into a long discussion of the Christian roots of modern science. For reasons which are not totally understandable (unless as a mere denial of Christianity), this is a rather controversial notion. We suspect that it is merely an extension of the Enlightenment's theory that religion is by nature superstitious. It may also derive in part from an instinctive tendency to withdraw from any

measure of personal or corporate responsibility. Although this is not the time to go into this in any detail, it must be mentioned. In our efforts to be good Christians we must be aware of the world we live in. Christianity is emphatically *not* a religion that separates us from the world. We are called, chosen and sent precisely to leaven this world with Christ's life and love.

While we are on the topic, we would like to add one further thread to the environmental discussion that swirls about us today. We do this because we see the environmental crisis around the world as one basically about religious views of the creation and of the human role therein. That further strand is what we can call the North American myth of the unspoiled wilderness and human perfidy. This is a theme that has run through much of the literature of the United States. It had its first major literary proponent in James Fenimore Cooper in his still-popular *Leatherstocking Saga*. The following is a very brief example of this literary theme:

In a word, the hand of man has never yet defaced or deformed any part of this native scene, which lay bathed in the sunlight, a glorious picture of affluent forest grandeur, softened by the balminess of June, and relieved by the beautiful variety afforded by the presence of so great an expanse of water.

Sadly, this notion of the purity of pristine wilderness and the totally destructive nature of human intervention on the earth pervades a large segment of the environmental movement and other movements in the United States and in other western countries. This spirit, it seems to us, is simply contradictory to a fully developed Christian understanding of creation. It preaches, in essence, the superiority of Nature untouched by human genius. It is no more than the Romantic notion of the pristine wilderness and the Noble Savage -- neither of which ever existed. It is in essence a denial of the Christian understanding of original sin and, in its most radical expression, of the Incarnation.

Several notions have been broached thus far, each worthy of careful systematic development. We shall consider at length: the sacramental nature of the present time; a third option (sacramentality) which lies between an *animist* view of reality and a purely secular understanding of reality; a consideration of evolutionary process in the light of historical event. Together these elements should produce a coherent Christian approach to the creation we are born to serve in the Lord.

## SACRAMENTALITY

In its opening message of October 20, 1962, Vatican Council II issued a call to Christians that will, if heeded, have



the effect of reshaping the whole of Christian life. The Council in essence issued a call to Christians to involve themselves fully in the work of the evolutionary growth of God's creation.

It is far from true that because we cling to Christ we are diverted from earthly duties and toils. On the contrary, faith, hope and the love of Christ impel us to serve our brothers, thereby patterning ourselves after the example of the Divine Teacher, who "came not to be served, but to serve...."

Accordingly, while we hope that the light of faith will shine more clearly and more vigorously as a result of this Council's efforts, we look forward to a spiritual renewal from which will also flow a happy impulse on behalf of human values such as scientific discoveries, technological advances, and a wider diffusion of knowledge....<sup>3</sup>

As one of the authors of this present book wrote shortly after the end of the Council:

The obvious direction of the Council [summarized by the above citation, eds.], reinforced by modern advances in the study of Scripture and by the works of people like Teilhard de Chardin, has indicated to the Christian that he must turn his eyes to the earth. All these new currents have stressed that it is not foreign to Christian thought and to Scripture, especially to the most theologically mature epistles of St. Paul, to consider material creation as something that will accompany Man into eternity. If such is the case, then the Christian must concern himself (or herself) with the advancement of Man, with Man's progressive domination of nature and with the full realization of human potential. Amid cries that God is dead, the Christian must recognize that some familiar forms of Christianity may indeed have died. The Christian may even have to realize that familiar portraits of the God-human relationship may have outlived their usefulness. God as a benign, and possibly even senile, grandfather-image probably is and should be dead. It is the task of the Christian in the second half of the twentieth century to examine the traditional teaching and to re-interpret it in terms of evolution, of new categories arising from a more personalistic philosophy, of Man's potential for growth, of new scriptural scholarship and of a new (actually, a very old) appreciation for earthly values.

Amid dreary forecasts of Christianity's demise in the materialism-choked main streets of the secular city, the Christian must look back to Scripture and

forward to a more technologically oriented culture. He must learn again the optimism of early Christianity that we shall one day overcome sin, death and the powers of evil. He must realize the power and strength that belong to a son of God, and he must learn to walk fearlessly into the maelstrom of human problems and to search there, and within himself, for solutions to these problems. There is an urgent need for Christians who are capable of working towards an integration of the material values of men with the divine values revealed to us in God's interventions in man's history. There is an urgent need for Christians who are discriminating enough to see the valuable contributions of recent and past Christianity and also to recognize its mistakes. In seeing that the Church may have become irrelevant to large segments of modern culture, they must also recognize what is of enduring value in the Church. Christians must realize that a task of immense magnitude confronts the Church, a task that can be considered accomplished only when the Church has succeeded in integrating all aspects of human life and human potential with the Spirit who dwells within her and who is her inspiration.

Our task, then, is to reverse a several-centuries-old trend toward isolation from the culture into a positively oriented thrust into the human condition. It is the task of the Church continually to probe and learn and re-express the one vital question: Who is Man, and what is his relation to God? To do this we must consider the traditional teaching of the Church and, applying the new advances in scriptural studies, restate the meaning and richness of Christian life. For the Christian of the twentieth century there is a whole new lexicon to be learned, a lexicon with words such as Vietnam, inner city, thermonuclear war, DNA and RNA, artificial creation of life, outer space, population explosion and widespread starvation, secular city, and on, and on, and on. Each one of these problems is but a manifestation of another more basic question, the ultimate question that each generation must face: Who and what is Man? The Christian life has something important to add to the solution of this question, but pat answers do not meet the challenge facing the twentieth century. This question can be solved completely only when the life-experiences of all men are added together in the dynamic context of the Spirit who dwells in the Church. All must cooperate, and the Church, along with all men, must seek data to give as full an answer as possible to this pressing question. The ramifications of the question of who Man is can only become more pressing and more urgent. Each



Christian in his daily life has something to offer to the Church in this quest. The Church needs the life-experience of all Christians and, really, of all people. Only when the human and the divine aspects of human life are completely integrated will the ultimate question of man's nature and destiny be answered. Still, from the seriousness of the problems to be faced in our own generation, it is clear that answers must be sought now, even with the realization that they are only partial answers.<sup>4</sup>

It is a commonplace to assert that the creation did not spring from God's hands in a perfected state. Neither the whole of creation nor the human as a part of that whole burst upon the scene in a state of perfection. Had we seen the first human beings walking the earth, the chances are that we would not have been able easily to distinguish them from the contemporary anthropoids. Yet the spark of greatness was there. They had to possess at least a crude but real self-awareness. Whether or not the first humans possessed more cultivation than that is something we'll probably never know short of heaven. It has been the customary practice in theology over several centuries to picture the first human being as a kind of Superman imposed on the rest of material creation from without. Adam was pictured by generations of theologians as being extremely intelligent, having knowledge of things that can be only a faustian dream for humans born a hundred thousand years later.

Theologically it is not necessary to postulate such a superior human. Some of the early Fathers of the church, people of the stature of Irenaeus and Clement of Alexandria, were quite willing to think of the first humans as barbarians in matters of human culture. We need not think of these first representatives of our race as capable of perfecting even the rudest of artifacts, much less capable of building cities or exploring space. But this first pair of our ancestors had to have one most important quality in order to complete the evolutionary thrust of creation back to God, namely, the ability to make a deliberate self-conscious act of surrender in love to God. Doctrinally, we know that these persons had the gifts necessary to accept the headship of creation<sup>5</sup> God offered to them and to us through them.

In every other evidence we have of that part of creation before us there has been human development. There has been a development of the cosmos from its creation to the growth of the magnificent system of planets and suns and galaxies and who knows what else -- things we are just beginning to try to understand. There equally has been development in human stature, physical, cultural and spiritual. We don't have to look very far back in human history to realize that this development has been uneven and is very vulnerable to all kinds of deadly attack and even to near extinction. The revelation of God itself has come to us by

development. Certainly God did not reveal himself or his will for us all at once. This is clearly the law of God's creation -- growth which will finally lead the creation to its destiny in its Source. God did not create a world integral in itself. He created and sustained a world that pointed and still points in Christ and his church to a reality beyond itself, to the God and Father who made it.

Clearly, God did not create a perfect world. Rather, he created a world-to-be-perfected in and by human beings in Himself-made-man. The whole notion of a grand material creation pointing in Christ to a spiritual fulfillment is the broad notion of sacrament. Note once more, please, that *spiritual* does not mean ethereal. In Romans 8 St. Paul says that we who possess the first fruits of the Spirit groan inwardly as we wait for our bodies to be set free. He does not say that we are waiting to be set free from our bodies. In the third chapter of Philippians St. Paul returns to the same theme, stating that the Lord Jesus Christ will transfigure these wretched bodies of ours into copies of his glorious body. As early as Irenaeus in the second century, it is clearly stated that the flesh is good, being prepared now in the Eucharist for the incorruption of everlasting life:

When, therefore, the mingled cup and the manufactured bread receives the Word of God, and the Eucharist of the blood and the body of Christ is made [the Greek text "and the Eucharist becomes the body of Christ"], from which things the substance of our flesh is increased and supported, how can they [the Gnostics] affirm that the flesh is incapable of receiving the gift of God, which is life eternal, which [flesh] is nourished from the body and blood of the Lord, and is a member of him? -- even as the blessed Paul declares in his epistle to the Ephesians that "we are members of his body, of his flesh, and of his bones." He does not speak these words of some spiritual and invisible man, for a spirit has not bones nor flesh; but [he refers to] that dispensation [by which the Lord became] an actual man, consisting of flesh and nerves and bones -- that [flesh] which is nourished by the cup which is his blood, and receives increase from the bread which is his body.<sup>7</sup>

Certainly, everything that we have learned in the last several hundred years about evolution shows us a world that is still growing, still striving for perfection. It is our belief as Christians that the fullness of that growth is in Christ Jesus and in his covenantal union with the church. More specifically, it is to be found in the *body* of Christ. St. Paul tells us in the Epistle to the Colossians (2: 9-10) that, "in his body lives the fullness of divinity, and in him you too find your own fulfillment, in the one who is the head of every Sovereignty and Power." It is in the body of Christ that we have salvation, in the body of Christ, then,



that all creation has its destiny and its fulfillment. The climax of the evolutionary process, modified and directed by sacramental event, is to be found in the body of Christ. St. Paul tells us in Ephesians:

Out of his infinite glory, may he give you the power through his Spirit for your hidden self to grow strong, so that Christ may live in your hearts through faith, and then, planted in love and built on love, you will with all the saints have strength to grasp the breadth and the length, the height and the depth; until, knowing the love of Christ, which is beyond all knowledge, you are filled with the utter fullness of God. (Eph 3: 16-21)

This is and will be our gift to creation, that, united with Christ as members of his Body and filled with the utter fullness of divinity, we shall bring creation to its destiny, which is the same as ours -- eternal union with God.

#### INDIVIDUAL UNION WITH CHRIST

Our salvation is in the body and blood of Christ. The covenant in which we are joined to God is the covenant in the body and blood of Christ. God's continued presence to us in the body and blood of Christ is a sacramental presence, one in sign not one in integral reality.<sup>7</sup> God's presence to us in the Eucharist, in the body and blood of Christ, points to that full union which will exist when Christ subjects the entire cosmos to the Father. We Christians are the bearers of this sacramental life to the entire creation. Our presence in that creation, our working it with our hands and our hearts, is its guarantee of liberation from the decadence of sin into life in God. Clearly we do not know what the final state of creation will be in the fully established and completed Kingdom of God. This is not yet revealed to us. We do not know what we shall be like when, as John tells us, we shall know as we are known. But we do know that all creation is called to an eternal destiny in God in and through Christ and in and through us in union with Christ in the church.

Individually we are incorporated into Christ in baptism. Baptism looks to the past insofar as it destroys our slavery to sin, and to the future insofar as it constitutes us as children of God. St. Paul says:

"In Christ you have been circumcised with a circumcision not performed by human hands, but by the complete stripping of your body of flesh. This is circumcision according to Christ. You have been buried with him, when you were baptized; and by baptism, too, you have been raised up with him through your belief in the power of God who raised him from the dead. You were dead because you were sinners and had not been circumcised; he

has brought you to life with him, he has forgiven us all our sins" (Col 2: 11-13).

St. Paul writes in many places of our incorporation into Christ. He uses many images to describe this union with Christ effected by baptism. He describes baptism in terms of dying, being buried and rising with Christ; in general he describes baptism as our sharing in the climactic salvific activity of Christ's life. Baptism is our *real* sharing in the most dramatic aspects of Christ's life. Paul speaks of being baptized into union with Christ, of being clothed with Christ, and of being made heirs under the promise. Over and over, to the point where one cannot doubt its literal meaning, Paul writes, You are in union with Christ. He also states:

And for anyone who is in Christ, there is a new creation; the old creation is gone, and now the new one is here. It is all God's work. It was God who reconciled us to himself through Christ and gave us the work of handing on this reconciliation (2 Cor. 5: 15-16).

and

A spiritual person, on the other hand, is able to judge the value of everything, and his own value is not to be judged by others. As scripture says: 'Who can know the mind of the Lord, so who can teach him? But we are those who have the mind of Christ' (1 Cor 2: 16).

Those in union with Christ, those who are baptized and live a life of faith, share Christ's life, his words, his thoughts, his desires and his power. In baptism we partake in the divine nature (cf. 2 Pet 1: 4). In union with Christ, we have truly become children of God. In Christ, who is by nature the Son of God, we become children of God, but no less children because adopted. We share the same sonship with Christ, though in a different way. By nature he is the infinite and uncreated Son. By adoption we are finite and created sons and daughters.

We have truly been admitted into the inner life of the Trinity. We share in Christ's relation to the Father and we share in the love which the Father lavishes on the Son. Since we live in Christ and share in the being of him who is our vital principle, we, together with Christ and the Father, share in the spiration (the "breathing") of the Holy Spirit who proceeds from the Father and the Son. We become grace-making creatures. Truly, in an astounding and mysterious way, we have been caught up into the dynamism of Trinitarian life and love. We have come to participate in the divine life while never ceasing to remain human. We have been given a likeness to God beyond the dreams of the author of the Book of Genesis.



When we look at ourselves, the number of whose days is so limited, how can we imagine that we share in the life of him whose days are without number? When we consider our limits and our weaknesses, how can we presume to say that we share in the power of him who created the universe, who sent forth from himself innumerable partial reflections of himself to fill the nameless void? When we look at the pettiness and ugliness and greed of much of our human strivings, how can we say we share in the bounty and beauty of him who is Lord?

Yet, scripture tells us that we do, that in baptism we have been raised with Christ to share his life, his power and his beauty. As he did with Mary, God in Christ has looked upon our lowliness and, if we cling to him and his will, all generations will call us blessed (Cf. Luke 1: 47-48). We rise from the waters of baptism as creatures destined to share in the Lordship of Christ over all things. We are not given the fullness of this sharing from the very fact of our baptism. It is clear that we do not fully share Christ's life from the beginning. We are meant to grow into this shared Trinitarian life, with our death, perhaps, as the moment of greatest growth. Our Christian lives are a constant attempt at a conscious integration of our humanity with the divinity given us at baptism. We can never come to our full stature as Christians if we are not conscious of our power, our dignity, our love and our life.

When God loves, he creates the object of his love. This love shows itself in creation, in God's Providence, in his redemptive life, death and resurrection. Each of these manifestations is productive. They produce creatures of all kinds which had not existed before; they produce sons and daughters of God who had not existed before. This is the love we share. As we grow into a deeper conscious union with Christ, the creative aspects of our life should become clearer to us. As we are more consciously aware of our union with Christ, we should see this creative love touching our families, our environment and ultimately our culture. As we become closer to Christ we possess him more fully, bring him more completely to those we meet and to all creation. As we become more and more other Christs, *alteri Christi*, Christ is more tangibly present to creation. We bear Christ's love in our being and this love cannot leave others untouched. Our Christian lives should bring good from evil, knowledge from ignorance, health from sickness, order from chaos. If we apply this love to our environment, to creation, it will be influential and effective because it is Christ's life.

In baptism we assume Christ's concern for creation. This concern, which clearly includes our efforts to understand creation as best we can, has become an obligation. If we share in Christ's life, if we think his thoughts and love with his love, we automatically have the obligation to work to transform creation into God's transfigured and glorious

creation. Were everything perfect, life on earth would be meaningless for us fallen creatures and probably a very boring state of affairs. How exciting could our Christian lives be if we had nothing to contribute to the growing Kingdom of God? How happy could we be if we never knew the spur of curiosity and the joy of discovery? What would beauty mean to us if there were no ugliness to respond to our hands and our hearts and if there were no limitations to be extended and refashioned? If a Christian does not bring the creative love of Christ to bear on the limitations of creation, that love of Christ will not be as fully present as it might and creation will always be the poorer. In order to most fully apply to creation the productive love of Christ in us, we must be aware of the life of Christ who dwells in us and in whom we dwell.

We share in all the powers of Christ. The Christian priesthood, insofar as it is shared in baptism, is the application to all creation of our sharing in the inner life of the Triune God. In short, it is the application to and penetration of all of reality with Christ's life, love and power which we have received in baptism and enflesh with our lives in the church.

The universe, all of material reality, then, is destined for life in God. Too many of us have been exposed to a theology that has dwelt on the annihilation of the created order as leading to the return of Christ to us both as Judge and final Liberator. There is a theology clearly going back to St. Paul and preserved all through the Tradition that the material world is to be redeemed in us and brought to the "same freedom as the Sons of God." Creation -- material reality -- is a necessary part of the final Kingdom. It will be transformed as will we. Now, in the present stage of salvation history, it, like us, is not in possession of its final integrity. It is in the same sacramental stage as we are. It points to the transformation that it will possess when God is all in all. This material creation, then, is to be respected, appreciated and loved both for itself as it is now and as it will be. Matter has meaning and dignity. It is not sacred nor is it simply a substrate for our life on earth. It has a meaning; it has a purpose; it has a destiny in God.

The future of the cosmos certainly depends to some extent on the direction that science takes from now on. We Christians in science, consequently, have an obligation both to inform the church of what is going on and what it is most likely to mean. We have an equal obligation to work for that understanding of things, deeper than our science itself, that will help provide direction for the scientific enterprise itself. It will change the future of the cosmos in Christ if we do these two tasks enthusiastically and effectively. Clearly, mistakes will be made, since we are all still learning in a very introductory way what God wishes of his creation. The greatest mistake we can make, however, is ignoring the challenge and the opportunity to learn as much



as we can about God's will for creation and translate it into directions for continuing scientific advance.

Were we to make just one recommendation in this paper for the future it would be: remember, we live in God and God lives in us. It is our duty to translate this union into the sacramental development of the final Kingdom of God, which will embrace created reality. We must be more aware of the riches of the Christian tradition about the unity of all things in Christ. The rest of this volume is concerned with the implications of this learning and awareness.

Some of the lines of the new "scientific world" are already apparent. This "new world" must be included in the sacramental and covenantal world of the church. Much, but not nearly all, of the responsibility for a developed *statement* of the church's response to the challenge of the *new scientific world* falls on the theological community. Like all major developments of doctrine, however, a very great responsibility for *living the development* prior to its statement falls heavily on all of us, clergy and laity, educated and uneducated, on each one of us. The burden must be carried especially by us Christian women and men of science. We must be the teachers to the church in this area and the evangelists to the scientific/technical communities. Rarely has any generation been blessed with such a magnificent challenge.

#### COMMUNAL CONSIDERATIONS

There are aspects of the mission of the laity that apply to all members of the covenanted community in virtue of their baptism and confirmation. In baptism we are incorporated into Christ in the church. We become members of that "holy society in which we cling to God" -- St. Augustine's definition of the church. We shall treat these first and then move into those aspects of Catholic mission for scientists particularly. In general, we must remember that it is as sons and daughters of the Father in Christ and in the church that we are to leaven the world and particularly the scientific enterprise. Vatican II states:

The laity derive the right and duty with respect to the apostolate from their union with Christ their Head. Incorporated into Christ's Mystical Body through baptism and strengthened by the power of the Holy Spirit through confirmation, they are assigned to the apostolate by the Lord himself. They are consecrated into a royal priesthood and a holy people (cf. 1 Pet. 2: 4-10) in order that they may offer spiritual sacrifices through everything they do, and may witness to Christ throughout the world....

....On all Christians therefore is laid the splendid burden of working to make the divine message of

salvation known and accepted by all men throughout the world.<sup>9</sup>

In general, all the laity (indeed, all Christians) pursue the same end, namely, union with Christ in and through the church. None of us is, nor can be, a divine freelancer. The law of love which the Council mentions is the same as Christ's command at the Last Supper: "This is my commandment: love one another, as I have loved you" (Jn. 15: 12). Clearly the love which Christ wants of us is not turned in on itself, nor is it a love directed solely toward Christ. The love of Christ impels us to go out to our neighbors and beyond them to all of creation. We can develop that love only in Christ in our covenantal response, that is in our response in the church.

We must look to *the inner Jesus* as Romano Guardini has phrased it. That is, we must look to Jesus in his union with the Father and to his covenantal bond (the church) with his people. We must look to Jesus, the Son of God *and* the son of Mary, our one mediator of the covenant between God and creation and among all the members of his mystical body. We are more accustomed to look at the historical Jesus, so to speak, *from the outside*. We seem to want to imitate him in his deeds and sayings without considering his motivation and source of strength. The inner perspective is quite important in a society losing its inner strength and cohesiveness and becoming content with mere observance, if that.

As has been noted, we are not simply grace-receivers. In Christ, we, in a participated way, join him and the Father in giving the Holy Spirit. In that sense, by our life in Christ and our love of Christ we *make grace*. Over the centuries an attitude has crept in that only religious and priests are called to sanctity and the rest of us have only to live a life of minimal response (e.g., avoiding mortal sin) to please God. It really doesn't matter who or what is to blame for such an attitude. No matter how it arose, it is pernicious. We are *all* called to be holy. We are *all* called to be Christ's apostles, preaching the Good News to all the world. We are *all* called to be "as perfect as the Father is perfect" (Mt 5: 48). In Christ we are *all* called to do our best to help redeem the world and enrich it and help bring it to the glory God has prepared for it.

As was said earlier, our growth into God in Christ is not simply a question of imitating Christ "from the outside," but from within. For our life in the world to be Christ-like, our *interior* world must become his. We who are baptized in the church are Christ-bearers. Through us Christ now penetrates and transfigures the world. He is active in his creation through our free response to his covenantal invitation. This truth must become visible in our lives. For us to be authentically Christian our thoughts, motivations, actions and reactions must reflect Christ's. When we have



achieved, with God's help, a truly adult Christian life there will be a *unity* of our attitudes and deeds with Christ's. Clearly, this is a long term task, one never completely finished even in heaven -- until the last day.

Our union with Christ, initiated in baptism, is a true union. It is an ontological union, to use a philosophical term. As this union grows, our relationships to each other and to the creation become more like Christ's relationships to humans and creation. More and more they take on an identity with Christ's concern and love of all that he has been given by the Father. This will be reflected in our lives as we realize more and more that we are the Christs of our times. This is not metaphor; it is literal truth. It is to this -- to being Christ for our time and place -- that we are called in our incorporation into the covenanted people of God. We are sent to share Christ with the world. In that sense we are the church.

The bond between Christ and the Father is his very life. So it must be with us. After considering the solitude of the Lord which is manifest throughout his life on earth, Romano Guardini continues:

"And yet I am not alone because the Father is with me" (John 16: 32). When Jesus turns back within himself, he encounters the Father. When Jesus takes counsel with himself it is the Father's word he hears. *When he directs his ear to the present moment*, the Father's will addresses itself to him.... And in hearkening to this will he is united in filial love with his Father. Jesus' meat and drink is to do the Will of the Father.... [I]t is not just a question of close presence, *but unity*.

In growing into Christ, we live in unity with the Father, seeking, finding and loving God in all things, persons and circumstances -- and vice versa. We are growing into an ever more intimate knowledge of the Father and of his will. This deepening union with the Father is a conversation about the things of this world, our relationship with *all* of creation and how God wants to be present in that creation in and through us. Jesus, in constant exchange with the Father, was informed by the Father *and* by the ordinary incidents of his life on earth. He was moved to action by "they have no more wine," "render unto Caesar the things that belong to Caesar," "even the dogs eat the scraps that fall from the master's table," "look at the lilies of the field." We are directed to the same thing -- to read continually with the mind of Christ the signs of our time and, in so doing, joined with our sisters and brothers in Christ and in the church, to bring Christ to the world and the world to him. We do not do this in general, but specifically, in that part of the world we see and touch and in which we work.

We develop this union with the Father in Christ in faith. The living faith, which we are considering here, is the recognition of the Father's approach to us and our response to his mandate to preach the Word. St. Paul describes faith as *hearing* and *responding* to what we have heard. Our faith will grow as Christ's life grows within us. As God's life grows within us we will *need* a deepened faith. We meet Christ particularly in the sacraments -- especially in the Eucharist. We hear him in the word of Scripture and in the voice of conscience. We meet him and hear his will in *every* decision and action of our lives. This does not paralyze us in our decision making. It is freeing. Our normal moral living, which is our standard mode of worship, rarely forces us to first principles. For instance, those pursuing a deeper union with God, do not have to wonder about, say, stealing money or destroying a reputation. We know habitually that it's wrong. Our growing into Christ takes on the same characteristics. Our faith becomes habitual and, as it does so, we hear God more often, but not necessarily more clearly. On the contrary, the more deeply we grow into Christ the more we *need* faith. The greatest saints, it seems, need faith the most. We do not know -- and never will -- God's will as God knows it, the God whom scripture assures us dwells in inaccessible light. More and more we have to live in trust as we allow God to love us *as he wills*, not as we want him to love us, to move and work in the world as he wants us to, not as seems convenient or congenial to us.

It is vital for all Christians -- perhaps especially scientists and technologists -- to find God in his world. We must find not only the God of the altar but also of our individual and communal lives and history -- always remembering that it is the *same* God.

Covenant implies from God's side the invitation to humans to join him in his redeeming love for us and for all of creation. Every occasion in our daily lives is such an invitation. If we are faithful enough not to need or require extraordinary signs, if we are generous enough to react to even the slightest hints we receive, then we will learn more clearly that God is active in our lives. We mustn't, however, expect greater clarity in every aspect of our lives. Certainty is not an aspect of faith.

If we strive to hear and follow the will of the Father we can be confident that the Spirit will be active in us. Christ takes over in us: his motivation, thoughts and desires become ours. We cannot overemphasize the reality of the union of the Christian with Christ.

In baptism we really are united with Christ, but, in that union we are incorporated into his covenanted Body, the church. As we grow into our union with Christ we must also grow more deeply into union with each other. We are confident that no one needs to be reminded of Christ's



mandate to the apostles at the Last Supper: "Love one another as I have loved you" (Jn 15: 13). We also remember his prayer to the Father later in John's account:

As you [Father] sent me into the world, I have sent them into the world, and for their sake I consecrate myself so that they too may be consecrated in truth. I pray not only for these, but for those also who through their words will believe in me. May they all be one. Father, may they be one in us, as you are in me and I am in you, so that the world may believe it was you who sent me. (Jn 17: 20-21)

We must be one with each other in making the Father known to the world. We must grow to want to share with each other and, finally, with all of creation the riches and the beauty that God has revealed to us and given to us. Paul teaches us that:

Now you together are Christ's body; but each of you is a different part of it. In the Church, God has given first place to apostles, the second to prophets, the third to teachers; after them, miracles, and after them the gift of healing; helpers, good leaders, those with many languages. Are all of them apostles, or all of them prophets, or all of them teachers? Do all have the gifts of miracles, or all of them have the gift of healing? Do all speak strange languages, and all interpret them? (1 Cor 12: 27-30)

Together, in union with each other in Christ, we make up the Body of Christ, especially but not solely, in the Eucharist: "The fact that there is only one loaf means that, though there are many of us, we form a single body because we all have a share in this one loaf" (1 Cor 10: 17). Our source of unity with Christ and with each other in Christ is the Eucharist where we bring our world and its responses (and needs) to be joined with the saving death of Christ to form the Kingdom of God. Baptism, then, in uniting us with Christ in "the holy society in which we cling to God" is of its nature a social sacrament. It incorporates us -- as parts, cells, if you will -- in the Body of Christ. We draw life from that Body (the church) and contribute what is in our power to the health of the other parts and in that way to the whole. Our joining with each other for the strengthening of the Body of Christ will be treated specifically in the next chapter.

As Brungs wrote a quarter of a century ago:

Confirmation, then, as a participation in the Spirit's work of proclaiming the saving act of God, must orient us from ourselves into the world. We do not go into the world just to be there. We

must go in love to save -- and to save by giving our witness to God's love and by giving to others what we have received from Christ. Confirmation is the sacrament of the apostolate. It is the sacrament of the Church's mission and of the mission of each Christian. It is our strength and our orientation in giving ourselves to others to show them the wonder of God's love for them. We who have been confirmed in the strength and love of the Spirit must witness to the effects of Christ's death and resurrection as does the Spirit in whose mission we participate. We must be apostles.<sup>11</sup>

#### OUR APOSTOLIC LIFE

Our covenantal union with God will enhance our freedom to search for the truth that is God, to love him and to join in his work "to renew the face of the earth" (Ps 104: 30), to join in building the New Jerusalem. Is there a hint of the vocation of the scientist or technologist in this last phrase?

The laity derive the right and duty with respect to the apostolate from their union with Christ their Head. Incorporated into Christ's Mystical Body through baptism and strengthened by the power of the Holy Spirit through confirmation, they are assigned to the apostolate by the Lord himself.<sup>12</sup>

We must notice the emphasis on the *apostolate*. Recall the scene after Christ's ascension into heaven (Cf. Acts 2: 1-4). The apostles and Mary, the mother of Jesus, were assembled in the upper room when the power of the Holy Spirit came upon them. Before they realized it they were down in the streets preaching the message of God's salvation in Christ. Ever since, despite some efforts to the contrary, Christianity has remained (and always will) a *street religion*. By and large, Christianity is to be preached in the streets of the world and to be lived *in the world* that is to be penetrated, informed, perfected and led forward to union with God in us. While some few may be called to serve and praise God in solitude, the great bulk of us are called to be active in the penetration and perfection of our families, our neighborhoods and of the whole of creation. We cannot be *Christians-at-a-distance*. We cannot remain aloof, remote, from the opportunities and challenges of our day. This is what Teilhard de Chardin meant when he said that "those who fail to see it (Christianity) in the most realistic and at the same time the most cosmic of beliefs and hopes, completely fail to understand its 'mysteries.'" By growing in Christ in the sacraments (especially the Eucharist), in prayer, in fasting and in charity towards others we in ourselves form an ever tightening link between Christ and all of God's creation. By using these means available to all who live in union with Christ we automatically spread his Kingdom throughout the cosmos. We are his surrogates in



extending God's freedom to all that exists. We are co-creators. We should be conscious of this gift and obligation.

Perhaps one of the most momentous concepts for baptized Christians is Jesus' statement at the Last Supper: "You did not choose me, no, I chose you; and I commissioned you to go out and bear fruit, fruit that will last; and then the Father will give you anything you ask in my name" (Jn 15: 16). The more our awareness of our personal election by God to be his son or daughter grows, the more we will realize we have been sent out of our "upper room" to bring Christ to our milieu. We will gain a greater familiarity with his desires for the being-renewed creation. Our life then becomes a race between guidance from above and human willingness to follow.

Generally speaking, the laity has not been called forth by church leaders to carry out, as fully as possible, their baptismal mandate. They have not effectively been called to "go out and bear fruit." Even now, there is a tendency to look at the role of the laity to be "little priests," i.e. lectors or deacons or such. Without denigrating in any way the ministry of the laity within the church, we can state that the primary mission of the laity is *in the world*. *Ministry* is good; *mission* is essential.

We -- no matter what our role in the church's mission -- need a deep faith in order to discern the spirit of our pluralistic and affluent world. Mere opinion is not enough for this, nor is it helpful. We need God's discernment which can come only from those Christians who think Christ's thoughts and love with Christ's love, i.e., those living their baptismal union with Christ. We need this union to lead us into a co-creative responsibility for shaping the future of the cosmos. Our piety as members of the holy society in which we cling to God, will be dynamic and effective only insofar as it is a creative collaboration between God and us in fulfilling God's providential desire for creation.

In the 15th chapter of his Gospel, John reports that Christ told the apostles at the Last Supper: "I shall not call you servants any more, because a servant does not know his master's business; I call you friends, because I have made known to you everything I have learnt from my Father." While a servant may wait to be told exactly what to do, a friend may initiate activity; a son or daughter may "be about my Father's business." Thus the covenantal bond into the Sonship of God, in virtue of our baptism, calls us to be about our Father's business, about the course of events in the history of the individual, the society or the church.

God's Providence does not operate in isolation from a recognition of our free response in Christ. God does not want to *direct history* without the free cooperation and the free imagination of the members of the covenanted community. He does not force his will on us. He wishes us to initiate

out of our own knowledge, our person and our love for him, for our fellow humans and for the whole creation. He wishes us to do this in cooperation with the hierarchy, our colleagues and with our faithful brothers and sisters.

An open and honest union with God prevents us from trying to build a world according to our own image. It grounds the creativity of our work and action and calls forth the fruitfulness of efforts. This is extremely important for scientists and technologists who are or will engage in work that may determine the future of the human race.

The *professional pray-ers* have unnecessarily complicated the whole idea of prayer. One does not need a method to talk to a friend or to fall more deeply in love with the beloved. Basically that's all that prayer is. It needs no complicated elaboration. The deeper we progress in loving God, the more his love penetrates into our lives, the deeper we will enter into our society and into the creation to transform it into the total Christ. Also, the more tightly it will bind us to each other in the work of proclaiming the Good News to all the world.

Although we often forget it, God is not a generalist. He does not love us because we're human beings. He loves us because we are *we* -- individual and individuated. God loves us as individually *bodied*. Being God, the Father can and does know us, not in some abstract way as members of a group, but in our specificity. Even though we know the biological facts, we seem to forget that there is a period only of some hours in the history of the universe when *we*, with our specific physical heritage, can be conceived and born. If we multiply that probability through five or ten thousand generations, we can come to see that God must have very deeply wanted *us*, in all our bodily individuality. The body is essential in our salvation. We haven't heard that said clearly enough in our theology for several centuries.<sup>14</sup>

In addition to our bodily specificity, we also have a specific history and a specific set of talents and training to bring to God. We scientists and technologists have a very specific mission in today's world. Like those who were (and are) sent out to convert "the pagans" of Northern Europe, Asia or North and South America, we are being sent out to convert the world in which we live and work. Our specific talents and education and interests are needed to evangelize the scientific/technical community which is so influential in transforming our world and building the world of the future.

In summary, all Christians, in virtue of baptism, are introduced into the life of the Trinity by their covenantal union with Christ. A possibly helpful idea is that in baptism we are called into a participation in the life of the Trinity and in confirmation we participate in the mission of the Holy



Spirit to "renew the face of the earth." In other words, our Christian calling is to *spread* the Good News that God has redeemed his people and that all are called to this salvation. Our Catholic life is *apostolic* by its very nature. It's not enough for us to know that God has saved the world by his love; we must tell that Good News to the world.

Christ is the highest possible expression of the evolutionary growth of the universe. God, in the Incarnation, imposed divinity on humanity in a unity that is so mysterious as to elude our understanding. This enfleshing of the divinity is the most complete possible incorporation of creation into God. And after He had ascended into heaven, Christ left the Church, as His prolongation, to continue the evolution of creation back to its Maker. The work of the Church is the restoration of all things to the Father, and the most decisive of this work is the continuing progress of man. The Church must concern herself most vitally with man's growth and she must integrate this growth with man's destiny in God. She must concern herself with man's culture not as an adversary, but as a leader and guide. It is not one of the Church's lesser obligations to promote scientific advance and all intellectual endeavor....<sup>14</sup>

That promotion of science is our task and privilege as members of the church.

#### ENDNOTES

1. Eric Vögelin, *The New Science of Politics*, Chicago: The University of Chicago Press, 1952, pp. 168-170. Vögelin maintains: "Gnosticism as a counterexistential dream world can perhaps be made intelligible as the extreme expression of an experience which is universally human, that is, of a horror of existence and a desire to escape from it. Specifically, the problem can be stated in the following terms: A society, when it exists, will interpret its order as a part of the transcendent order of being. This self-interpretation of society as a mirror of cosmic order, however, is part of social reality itself. . . . The successful articulation of a society is a fact that has become possible under favorable circumstances and this fact may be annulled by unfavorable circumstances, as, for instance, by the appearance of a stronger, conquering power.

"In every society, thus, is present an inclination to extend the meaning of order to the fact of existence, but in predominantly Gnostic societies this extension is erected into a principle of self-interpretation. This shift from a mood, from a lassitude to take existence for granted, to a principle determines a new pattern of conduct. In the first case, one can speak of an inclination to

disregard the structure of reality, of relaxing into the sweetness of existence, of a decline of civic morality, of a blindness to obvious danger, and a reluctance to meet them with all seriousness. It is the mood of late, disintegrating societies that no longer are willing to fight for their existence. In the second, the Gnostic case, the psychological situation is entirely different. In gnosticism the nonrecognition of reality is a matter of principle; in this case, one would rather have to speak of an inclination to remain aware of the hazard of existence in spite of the fact that it is not admitted as a problem in the Gnostic dream world; nor does the dream impair civic responsibility or the readiness to fight valiantly in case of an emergency. The attitude toward reality remains energetic and active, but neither reality nor action in reality can be brought into focus; the vision is blurred by the Gnostic dream....

2. G. K. Chesterton, *The Everlasting Man*, Garden City: Doubleday and Company, Inc, Image Books, 2nd printing, 1955, pp. 145-151.

3. Vatican II, Opening Message, p. 5. All citations from Vatican II are taken from *The Documents of Vatican II*, New York: Guild Press, 1966.

4. Robert A. Brungs, S.J., *Building the City: Christian Response and Responsibility*, New York: Sheed and Ward, 1967, pp. 5-7.

5. Cf., *Some Christian and Jewish Perspectives on the Creation*, St. Louis: ITEST Faith/Science Press, 1991.

6. Irenaeus, *Adversus Haereses*, 5, 2, 3. The citations from Irenaeus are taken (with minor changes in style) from *The Writings of the Ante-Nicene Fathers*, Volume 1 (Grand Rapids: Eerdmann, 1926). Much of Book 5 is concerned with a refutation of the Gnostic notion of the corruption of the flesh.

7. The sacraments are signs which effectively point to some integral reality. Integral reality is complete in itself and, thus, points to no reality beyond it. For example, the union of Christ and the Church is sacramental. It points to Christ's union with Mary which is integral. There is no greater union of God and creation to which their union can point.

8. Spiration is a technical theological term to indicate the procession of the Holy Spirit in the Trinity. The dogmatic tradition of the Church describes the Son as "generated" by the Father and the Spirit as "spirated" or "breathed" by the Father and Son. The English word "conspiracy" originally carried this meaning. We use the technical term here, because the mystery of the Trinity is so profound there is really no better way of saying this -- at least none that we know.

9. *Decree on the Apostolate of the Laity*, no. 3, p. 492.

10. Romano Guardini. At the time of printing, this reference is not available to us.

11. Brungs, *Building the City*, pp. 106-7.

12. *Decree on the Apostolate of the Laity*, no. 3, p. 492.

13. For a fuller treatment of the need for the body in salvation and of the two-in-one-flesh nature of the Christian covenant, see Robert A. Brungs, S. J., *You See Lights Breaking Upon Us*, St. Louis: ITEST Faith/Science Press, 1989, pp. 225.

14. Brungs, *Building the City*, pp. 105-6.