



We are approaching the last year of our century and of the millennium. I know the dispute about when the new millennium begins but let's use the commonly held, maybe ignorant, thought on this. Many of us are children of the 20th century and always will be. Some are members of the bridge generation and will live deeply into the 21st century. To them we must pass the torch.

I propose in this issue that we pass the torch in a specific way with a specific set of proposals — well, one proposal. I suggest that as a group ITEST look to the questions involved in a life sciences/faith activity. This need not preclude other activity as well, but it would give the group a focus. I would further ask that you ponder these things deeply and help us to come up with a valuable aid to the Church in her need.

We can begin the process of studying, thinking and loving with the *Thirty Something* Convocation in August at Loyola University - Chicago on THE GENOME. We can begin this reflection. This is an excellent occasion for the Board to look to the past and the near future to contemplate those things we can do to make this a reasonable and realistic goal.

I want to wish you all a very Blessed New Year. As we approach the 2,000th anniversary of the birth of Christ, let us raise our minds and hearts to the true meaning of that event. Christ did not become one with us so much as to become man, but more to bring us into God, not so much to become one with us but to show us how to live so that we might become one with God. The Board of Directors joins in prayer with all the members, asking the Father of us all to empower us to know and love the truth. He is that truth — in Christ Jesus our Lord. That is our prayer. Please share your wisdom and insights with us. In the meantime, let's thank God for thirty years of existence and hopefully for a good measure of success in our corporate undertaking. We also ask his favor for many more years of existence — if such be his will. I want to thank every one of you for your help over the years and ask for its continuance. It has been a wondrous time for me to be in such contact with you. God's blessings on you all.

Robert Brungs, S.J.

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The ITEST Bulletin: Publisher, Robert Brungs, S.J.; Editor, S. Marianne Postiglione, RSM

ITEST Offices: Director, Robert Brungs, S.J.
Director of Communications, S. Marianne Postiglione, RSM
221 North Grand Boulevard
St. Louis, Missouri 63103 USA

ANNOUNCEMENTS

1. Planning for the August 1-5, 1999 *30-Something Celebration* of ITEST's 31st anniversary at Loyola University, Chicago, is in the active stage. Recently we received confirmation from Archbishop Joseph Pittau, SJ, Vatican Secretary of the Congregation for Catholic Education, Seminaries and Institutes, who on August 2 will give one of the main addresses at the conference. Francis Cardinal George, Archbishop of Chicago, (Theology/Biotechnology) will speak on August 4. Both of these 7:30 evening addresses will be open to the public. The other presenters are: Dr. Brendan Niemira, Michigan State University, (Plant Genetics); Dr. Randall S. Prather, University of Missouri/Columbia (Animal Genetics); Fr. Kevin FitzGerald, S.J. (Human Genetics and Ethics) Mr. Richard Cusack, TV producer/director, film writer, (Biogenetics in the Media); Dr. William Sly, Geneticist/Pediatrician, St. Louis University, (The Physician & Biotechnology); Dr. Alice Hayes, President, University of San Diego (Education in Biotechnology & Faith/science). You have already preliminary publicity, including room/board and registration figures. **Please reserve these dates: August 1-5, 1999.** The daily program will afford ample time for informal as well as formal interaction with the speakers and the other participants. The choice of the Mid-west location should make it relatively easy for many of our members to attend. The planning sub-committee has even scheduled a "free" day to afford participants the opportunity to see the sights of Chicago (boat and bus tours, museums, restaurants or restored neighborhoods).

2. Renewal membership notices have been sent out. It really cuts down on unnecessary postage and handling for second and third notices if you renew during this first round. Remember, membership runs through the calendar year. Again we are keeping the yearly fee (\$45.00; students: \$20.00) at the same rate again this year.

3. BOOKS RECEIVED:

Origins Linking Science and Scripture by Ariel A. Roth, Review & Herald Publishing Association, 1998 pp. 384, hardcover. The publisher notes, "Are the worlds of science & religion irreconcilable? Scientist and Christian Believer Ariel A. Roth argues that taken together, science & religion give us a more complete and sensible understanding of the world around us, our place in it, and our ultimate meaning and fate."

Glimpses of the Divine: Reflections on Revelation and

Liberation through Science by A. Jesuraja, Indian Society for Promoting Christian Knowledge, Publisher, 1998, pp.231, paperback. If anyone would like to review either of these books for publication in a future bulletin, let the ITEST staff know and we will send you the book which then is yours to keep.

4. From Francisco Muller: "Rereading more calmly Dr. Meijknecht's Summer article on St. Prometheus (Vol. 29, #3) I must recognize that much of the criticism I directed in the Autumn bulletin against his sources, Noble, Taylor, etc, were not really endorsed by him. In this sense I must apologize if the readers thought he did. On the other hand I would respond to his question (teach or search for a moral theology technology?) that, in theory, teaching is better and more secure; but in practice searching together with his students might be the only practical and pastoral way of eliciting that moral theology of technology we need so much. That is the art of education: make them say what is true and correct but with their own words. Since technicians are especially deprived of those 'own words' in the field of moral values, then, certainly, an initial search for a 'language' is imperative. Go ahead with Taylor, but with the Pope in mind."

6. Look for ITEST's listing under the National Library of Medicine at DIRLINE (locator.nlm.nih.gov) or a prototype simple search interface at (<http://sis.nlm.nih.gov/dirline/>). DIRLINE is available free of charge on the NLM computer system, 24 hours a day, seven days a week. "DIRLINE (Directory of Information Resources Online) is the National Library of Medicine's online database containing location and descriptive information about a wide variety of information resources including organizations, research resources, projects, databases, and electronic bulletin boards concerned with health and biomedicine."

7. Periodically we are asked to recommend names of speakers for presentations on faith/science or on aspects of science and technology as they relate to the human being's place in the world and the universe. Tom Sheahen has designed a lecture on: *electricity generation in developing countries and the impact on CO² and global warming*, which has been very well received by varied audiences at two universities. If you are interested in this topic you may contact physicist Sheahen at tom_sheahen@ccmail.gmt.saic.com . OR write to him at 305 West Side Drive, #303, Gaithersburg, MD 20878.

A VERY, VERY MODEST PROPOSAL

Robert A. Brungs, S.J.
Director: ITEST

More and more, I have begun to feel unhappy with the direction of "mainstream" science/theology work. It seems to me (maybe I'm just getting old and crabby) that the work is abandoning some (or much?) of its Christian roots. It could be that I am simply out of step with the whole direction of the movement and time may be closing in on me. I am certainly of the twentieth century even though I want to look beyond it and see the outline of the twenty-first century.

I am referring in the first instance to the proliferation of what I call a "Creator theology." In this, God is referred to as Creator (so far so good) but I wait in vain for the next words. There is never any following sentence which also calls God Redeemer or Sanctifier. It would seem as if the Creator is alone, a "god of the philosophers." It seems to me what we're doing is talking about a Creator (and maybe Sustainer) who is absolutely alone. What is not being talked about is the "Christian God," a Trinity of divine Persons.

He [Christ] did not come so much to bring God into human life as he did to bring human life into God.

We Christians believe in a Trinitarian God, a Trinity of Divine Persons. We should always promote such a God, if He needs promotion from the likes of us. He will do His work anyway, whether or not we acknowledge or praise Him. But if we are really serious as Christians, we cannot help acknowledging and praising Him as He exists. Otherwise, it would seem that we are falling into the same abyss which claimed Sir Isaac Newton and others before us. If we do not promote a Trinitarian God, we are settling for a "god of the philosophers," a pale and ghostly God indeed. In philosophy, while studying Natural Theology, I made the remark that I could never bend the knee to the God we were learning about. That's still the case. I cannot personally worship such a monochromatic, "bloodless" God.

Our theology must be centered on the Redeemer God — so I propose. Even in the very writing of the Bible, the first encounter is with the God who saves us. The God who created us and the entire cosmos is a later

addition. [Genesis is not the first book of the Hebrew Testament which was given us.] We are indeed to serve and praise the Creator but in the context of the Redeemer. As the narrative of the liberation grew and developed into Christian times it has become "obvious" that God himself has not, indeed, created us and then walked away from his work. In His Son, by the power of the Spirit, he has stayed with us in our development, leading us back to Him. By way of the Revelation — that is really the message sent by God Himself about Himself — he is fulfilling us in our journey which will lead to our sharing in the divine nature.

Christ came to us, but more, He came to lead us into our becoming a "part of God," created as we are. He did not come so much to bring God into human life as He did to bring human life into God. As Peter says: he came to give us a share in the divine nature (2 Peter). He came, became one of us in the body of Mary, then, for a further purpose, one of utmost importance: that we might become one with God in our resurrection. He gave us the Spirit of God to remain with us and sanctify us, make us more worthy of the promises of Christ.

For ecumenical purposes we can speak of the Creator God, always remembering, of course, that this is far from the full story. But let us never forget that, talking solely of the Creator God leads to a "natural theology," not to a revelational theology. The message is sorely truncated in the process and becomes debilitated. It seems to me that true ecumenical dialogue should insist on our putting forth the truth as we know it. We should do this humbly and without arrogance, but we should do it. We have something to give the world, indeed the most precious of gifts. We should not be reluctant to give it to anyone who will listen. Unless our position is in the mix, the mix will be poisonous indeed.

Having said all of this, where does it leave us? Science as well as "theology" or "faith" is not all of one piece. There is no "Theory of Everything" that comprehends all of reality. What we have is physics, chemistry, biology, anthropology and all the rest. There is no unified method of experiment, much less an integrated approach to reality. Perhaps we will in time come to such an integrated approach. In the meantime, these all remain separate disciplines, more or

less related to each other.

While many other science/theology groups are concentrating on the bestiary of astrophysics and a philosophical science of one sort or another, I would propose that ITEST consider concentrating on biology (more generally, the life sciences) and faith. Certainly, in the theological (revelational) scheme of things, the human is more important (and of vastly more interest) than the quantum world. That world is important, but not really so important for our salvation as the world of the biology to come. I say this as an erstwhile physicist. Mankind is more important than an atom — at least so say I. I am, then, proposing that at least some of us more or less concentrate on faith/life sciences in our thinking and praying. Perhaps, God willing, we might build a base on which the future can erect the house or whatever else that will might desire. It is a case of interpreting the course of salvation and the discoveries of the life sciences.

I realize that I am far from competent enough to do this on my own. I can possibly lend a hand here or there, but together, ITEST women and men may be able to make a significant contribution to the Church. We have a revelational base that is not yet complete. It won't be complete, in fact, until the human race arrives at the "fullness of truth," which will not occur before the Lord returns to us for good. As Pope John Paul says in *Fides et Ratio* (11): "For the People of God, therefore, history becomes a path to be followed to the end, so that by the unceasing action of the Holy Spirit the contents of revealed truth may find their full expression. This is the teaching of the Constitution *Dei Verbum* when it states that 'as the centuries succeed one another, the Church constantly progresses towards the fullness of divine truth, until the words of God reach their complete fulfillment in her.'" (No. 8)

But what about the life sciences and the history of humankind? What can we learn from the scientific approach to the human? Vast amounts of information on our makeup! From a further knowledge of the genes, proteins, drives, etc., we can learn a great deal. But how are we to learn it? We are not looking to build a science-based theology of man. We are searching for a "science-open" theology. But even a science-open theology is only part of our task. This theology must somehow fit in with, be in conformity with, our revelation-based, faith-based, notion of humanity. But, again, will a life science/faith be satisfied with using biology as a "water-boy," pouring out information only? Will we be taking the life sciences seriously enough if we look to them *only* for more and better information?

It [biology and the other sciences] has the competence to provide us with very much information, but I suspect we have the right to expect much more, though it may be difficult for us right now to articulate what that something more might be.

I am, then, proposing that at least some of us more or less concentrate on faith/life sciences in our thinking and praying. Perhaps, God willing, we might build a base on which the future can erect the house or whatever else that will might desire.

We have St. Augustine's assurance that the book of revelation and the book of nature have the same author. But these two entities should be mutually helpful, assisting each other in probing the secret designs of God. Our understanding of Revelation is far from complete. We have, in the fallout from the Galileo case, changed our interpretation of the Scripture with regard to the physical centrality of the earth in the cosmos. It may well be true that work in biology/faith will lead to other and better interpretations of what Revelation teaches us about humanity. With the assistance of the "sciences dealing with our bodies and with human interaction" we may come to a fuller and better understanding of that humanity. Again, we are talking about interpretation.

In his work, *In Genesi ad Litteram*, St. Augustine remarks: "Whatever they (we can substitute 'scientist' for 'they') can really demonstrate to be true of physical nature, let us show to be capable of reconciliation with our Scriptures." We do have continually to keep our interpretation of Scripture in line with what we know to be true from other sources.

We can grow in our understanding of how Christ was conceived and how he developed in Mary's body. We can learn, too, how we are conceived and develop in our mother's body and later. We can begin to envision deliberately changing our physical destiny either in the womb or later. The future seems to be radically open-ended. Whether it will work out this way, though, is anybody's guess. One way or the other, it will be a moral issue how we in fact pursue these types of "progress."

A case in point is our physical lineage. How important is it to us as human beings? Seemingly, it is very important if we judge from the number of people interested in genealogy and/or knowing who their 'birth-mother' was or is. When the substitution of genes becomes regular or commonplace, what will this do to our notion of physical lineage? Will we acqui-

esce in the notion that we are basically "atoms in the void" or will we demand that sense of community expressed by and in physical lineage? Will that continuity with the past and future be lost or will we demand to know "where we came from"?

A quarter of a century ago I was quite willing to set up a sharp distinction between the therapeutic use of genetics and the enhancement of the human composite. Now I am not so certain as I used to be. The thought continually haunts me that a judicious enhancement of the human composite is necessary for the final "transfiguration of our wretched bodies into copies of his glorious body." I don't know how far such a concept can or should be pushed. But I don't think it should be totally ignored either. It offers, for one thing, an avenue along which biologists and theologians can develop a "theology of man" or maybe a "biotheology of man."

First, in the area of a pre-theological level of faith, we have to confess to some sort of realism. We are, and can only be, interested in the world as it is, not as we would like it to be or may think that it is.

I am not so sure as I once was that all "enhancement" of the human composite should be avoided. First of all, it will be attempted — although that by itself does not make it seemly or right. Secondly, although the thought has been slow to come, it may be that Christ will not return to bring the world to himself until mankind has reached a "state of physical perfection" that will enable it as a group to be "transfigured." That that could come in many ways, including final rebellion, seems to be a commonplace. The return of Christ to judge the race could be a "sweep up to the eschaton," as Teilhard would have it or a "sweep down to the eschaton," as I see it. Rebellion against God (remember Satan's challenge to God) is as likely a scenario. We don't know which it will be. It could be either one or the other. Like so many other things, we'll know more later.

Where does all this leave us? Almost back where we started, namely that biology (the life sciences in general) must assume an importance it (they) hitherto has (have) not been given in Christian thought. It seems to me at present that it is imperative that there be a pre-theological level of faith in all who dialogue on these matters. We must develop a common vocabulary of some kind. Otherwise we will not be able even to talk about the issues. Some kind of discourse is needed if we are to build an edifice of reason and faith. That is why Pope John Paul's letter on faith and

reason, *Fides et Ratio*, is so important right now and into the twenty-first century. [The Introduction to that letter is re-printed in this issue of the *Bulletin*.

First, in the area of a pre-theological level of faith, we have to confess to some sort of realism. We are, and can only be, interested in the world as it is, not as we would like it to be or may think that it is. We must "follow the rules" of biological construction. We cannot, just by willing it, create a being with twelve legs and built very low to the ground, to handle the increased gravity of a planet like Jupiter. We have to work with "givens," biological and others. We can, or soon will be able, to make small changes in the construction of biological things, but we cannot create life. We have to conform to the "natural law" of things, at least for the foreseeable future. Nor can we treat things solely as they "should be." Science and theology have this much in common: they must, to be genuine, treat reality (truth) as it is found. Nothing else has or will work.

This may be saying no more than biological entities have a truth that must be respected and conformed to. Pilate asked what truth is; he was answered that I (the Redeemer) am truth. This truth will always elude us in its fullness, being much, much more, much bigger, than we are. But it is appropriate to us insofar as we can reach out to it and perhaps grasp its hem. Slowly we can assimilate it and make it ours. But it will not be until the end (or the beginning) that we shall begin to comprehend the beauty of that truth. It is what gives meaning to the facts of biology — truth. It is this truth, unattainable in its fullness, that we must seek step by halting step. The Body and Blood of Christ in the Eucharist is an indispensable element in this process of growth into God.

More, this is a task for all Christians — all have something (even much) to contribute to the search, even if it defies articulation. Women as well as men and children have all caught some aspect of the goodness of God that no one else has caught so well. It may be built into us. Women certainly see a different aspect of reality from men. It cannot be classified as logic or a lack of logic, knowledge or a lack of knowledge, emotion or a lack of emotion. I know too many women who are more logical than I, too many women who are more knowledgeable than I, and so on. In fact, in Genesis we read that God created man, male and female he created them. That is why a man must leave his family and cling to his wife and the two shall become one. Mankind is both female and male and each has as much as the other to contribute to, for instance, the life sciences and faith, as the other. We must incorporate it all into the message of the human.

Women and men, we need the significant contribution of each to approach the fullness of humanity.

The same is true of how we treat other living beings. We rely on them for food and drink, for clothing and many other necessities. We rely on them for companionship and even sometimes for affection. But we cannot rely on them for wisdom and love. These are human capacities. Although we can and must readjust our treatment of animals, they are not human; they must occupy a lower place in the "great chain of being." Sentimentality à la Disney has no place in scientific or Christian appreciation of reality.

We must develop a "philosophy" to express the concepts we treat and the conclusions we must draw — a kind of anthropology. I hesitate to say what it would look like and what words in which it would be expressed. That should come, I would think, out of the process of honest dialogue — honest and sincere listening to the thoughts and words of each participant. It is far too early to dialogue with those in opposition to God, those who declare that "mankind is alone, always has been and always will be." What we need first is a dialogue among Christians in science, philosophers, theologians and whoever else feels she or he has anything to say. Moreover, it must be a dialogue between men and women who see the "body" and its relation to the "soul" in different ways.

We must, indeed, articulate an "anthropology" to begin to gather together all the strands of the human. But we should learn from the past that it must contain a serious biology. The human person is both physical and spiritual; it is neither only one nor the other. Faith tells us that God creates the "individual" soul. But what does this mean? It means, I think, that God creates a unity, a particular body and a particular soul. He creates a person, a "matched set" as it were. God refers to the body in creating a soul and refers to the soul in creating a body. Otherwise, why would he bother with "the work" of creating each soul for each body? If the soul had no qualities that conformed to quantity, why wouldn't he create souls by the millions and get ahead in his work?

The soul is only a principle of being; it is not a being. Does God create principles of being rather than beings? Can it be — this is only a thought — that the "soul" together with the "body" is a person? Does God create "half" of the person and man and woman create the other "half?" These are truly wonderments. Maybe I just don't understand, but I am not comfortable either with the medieval synthesis or my own questions. All I want to do with this line of thought is emphasize the unity, the oneness of the human being.

We must work out ways of discussing such aspects of the human as "body" and "soul." Although we may all use that language I am confident that it does not carry the same nuance for each of us. I would be quite surprised (and disheartened) if that distinction meant exactly the same thing to each of us. In many ways it is too intimate a distinction to be considered the same by each and every one of us. Moreover, there is a distinction between "time" and "eternity" that must be worked out with regard to the human. And further, we must consider each others views of the difference between mankind and animals and plants. This is merely part of the agenda I can foresee right now — stuck as we are in time.

Moreover, we are looking to begin this process with our 31st Anniversary Convocation at Loyola University - Chicago in August. Much interesting material should come from the "experts" we have gathered together to present papers to us.

Having worried this around a good deal, much more than is evident in these scribbles, I would like to propose that ITEST as a group begin to work on such issues as these. It is evident from the above that I am more or less lost in the speculation of how these two entities can effectively interact. I am pretty sure that the "biological" cannot present all the facts and theology (or faith) cannot provide the meaning. That would do nothing for the integration of the two of them, or anything else really. We need real integration, not a spurious listing of traits and an equally spurious understanding of those traits. We are working ultimately towards the both of them becoming "one" in our understanding of our faith. We need real coming together, real commingling, not pseudo wisdom.

With this short article, born out of a sense of unease with much of the dialogue being pursued, I propose that ITEST (all of its members) *begin* the process of working out the relationship between biology (all of the biologies) and the faith. I am not too concerned with theology — not yet, though even in our expressions of faith theology is present. I am more interested in a Scriptural faith, a Scriptural understanding of the things we believe, than I am in the philosophical, abstract faith of many theologies, at least as they have historically been presented to us.

I have not put my finger on the key — nor did I expect to — to the integrative and integrating meaning of things. I strongly suspect that the Eucharist may ultimately provide the key. What does the fact that Christ remains in the world Eucharistically mean in all

of this? Will it unlock the mystery for us? But maybe that is looking too far ahead. Or is it? I do ask each member of ITEST, if possible, to begin to think and to pray along the lines indicated. More than thinking, prayer is absolutely necessary, that prayer to God to provide the wisdom needed to make a start in the direction indicated. The heart, after all, has reasons that are unavailable to the mind — to paraphrase Pascal.

Don't, please, give in to the temptation that urges one to be silent because he or she is not smart enough to contribute anything of substance. Don't surrender to the temptation that says I only have a tiny idea that will get lost in the grand designs of others. In other words, give what you have, even if you don't think it's worthwhile — or even if you think your idea will solve all or many of the problems.

ITEST will provide space in the *ITEST Bulletin* to print what material we will receive. We can in that way all share in the thoughts of each. Moreover, we are looking to begin this process with our 31st Anniversary Convocation at Loyola University - Chicago in August. Much interesting material should come from the "experts" we have gathered together to present papers to us.

Maybe I have concocted the problem in my own mind. If so, I am sorry. If I have not, if this is a real work to be done for the sake of Christ and his Church, I wholeheartedly commend it to your consideration. I think, suspect, believe, whatever word you want to use, the body is far more important in every way than we generally believe. It may not be so, but I strongly think it is. The question of the meaning and importance of the body is worth thoughtful, serious consideration.

CREATION AND EVOLUTION: A BRIEF CRITIQUE

Dr. Robert J. Doyle
Unit 303 at 3801 Riverside Drive
Windsor, Ontario N8Y 1B2
Canada

Doctor Doyle is Professor Emeritus of Biology at the University of Windsor in Windsor, Canada. In this article he comments on the Proceedings of the October 1997 Workshop, Creation and Evolution, critiquing some aspects of that Workshop. Doctor Doyle is a very longtime member of ITEST. We thank him for his expertise and for writing this critique.

Creation and Evolution is extremely informative and highly evocative, even to this ex-Biology teacher and occasional amateur philosopher. I have some comments to make about a few of the issues raised in *Creation and Evolution*. I will focus first on Dr. Behe's paper and later raise a couple of general matters.

Behe's concept of "irreducible complexity" as implying "design" is — I'm sure you're hearing — simply another form of the "god-of-the-Gaps" argument; i.e., whatever we don't understand, we attribute to the direct intervention of God. (He feels that bacterial flagella and membrane passage are then directly caused by God.)

Readers should also be aware that other branches of Biology (i.e., bacteriology, virology, cell biology and

the like) have established literally dozens of forms of bacteria, radically different from the "Typical Cell" of Biology texts. There are more than thirty different methods of getting energy, at least, five forms of photosynthesis, sheaths, shells, etc. and, above all, an incredible range of biochemical pathways. These fairly recent discoveries provide an enormous basis for the evolution Behe wants to deny. In any case, it's pretty clear that the ability to move to an area of higher concentration of nutrient or to selectively import certain chemicals while excluding others etc., is extremely "advantageous."

Above the bacteria, but still microscopic, are a group of organisms which have some resemblances to the "typical" Biology class cell. We used to call these "Protozoa" but we now know they probably evolved from a variety of original roots. If the bacteria developed

into a wildly variable biochemistry, these creatures are the masters of structural diversity. Among them are organisms with and without flagella, cilia, testes, spines, chloroplasts, mitochondria (energy generators), several new forms of cell division, appendages of various kinds, and many others. Many of evolution's experiment here did not survive; others evolved no further, some continued to develop into the higher cells — plants, animals, fungi - we are more familiar with.

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On the issue of the Origins of Life "gap," "irreducible complexity" is yielding to an explanation involving a series of possible steps from self-reproducing nucleic acids through prions (mentioned in a separate section of *Creation and Evolution*), through subviruses and viruses to primitive bacteria.

Behe deplores the lack of evolutionary education in biochemistry. I agree with his position. But Behe's specialty precludes time to read the numerous journals in the fields relating to cellular evolution and, regrettably, a biochemist's education requires a large dose of chemistry.

Furthermore, his analogy comparing the typing of monkeys and the shuffling of letters to compose a make-sense message is improperly applied, Behe has presumed — from the very beginning — the outcome of these random processes. (This is similar to presuming the result of an experiment, which, as a scientist, I'm sure he would not do).

Now for some general remarks:

I am concerned about an occasional failure to understand the meaning of the phrase "Survival of the Fittest." It is more than a tautology! If it is instantiated, it implies "This type of organism has survived and therefore must be fitter in some way." The evolutionary biologist then must ask, "What advantage does this creature have?" (i.e., resistance to antibiotic, thicker shell, more active enzyme of some kind, slightly darker pigment, and so on). In addition, the word "fitness" should be interpreted somewhat more broadly. Fitness may take many forms. But especially neglected here is the role of cooperation (including symbiosis). The human species, wolf packs, bees and the like are good examples of the advantage of cooperation. The typical cell of first-year biology, with its mitochondria, plastids, centrosomes, and so on is a many-times-over symbiotic entity. The word "theory" is also frequently used incorrectly. It has two meanings in science. In one meaning, it indicates something conjectural, speculative, based on minimal evidence and logical leaps. In the other sense, it means an explanation which has been extensively demonstrated. The Germ Theory of Disease, the Atomic Theory, Quantum Theory, the Theory of Continental Drift, the Gene Theory and many others are examples of this latter use.

Having grappled with the creation-evolution problem for a long time, my personal solution — I urge "debaters" to reveal theirs up front - is an epistemological one. I argue that theology, philosophy, mathematics, science, the performing and plastic arts, athletics, and so on, are all "ways of knowing." Sometime they address the same subject and may come into apparent conflict. Like the wave-particle anomaly, the mind-body issue, the three-body problem, and so on, we have to reserve judgment at this time in history. After all, we are creatures of "darkened (if seemingly improvable) intellect." I call it "suspended judgment."

The only difficulty I have with my position is reconciling my too-human mind with this vagueness. Which is probably the way it should be.

DR. BEHE RESPONDS

In his critique of *Creation and Evolution*, Professor Robert Doyle remarks that the concept of irreducible complexity is "simply another form of the 'god-of-the-Gaps' argument; i.e., whatever we don't understand we attribute to the direct intervention of God." I disagree. Irreducible complexity is a positive criterion that is strongly correlated with intelligence, as I tried to show

in my essay by using the cartoon of the jungle-trap (page 14). The argument to design is based not on ignorance, but on simple inductive reasoning: Whenever we see systems of a certain type of complexity, we always find they were designed. In the past few decades we have unexpectedly discovered such complexity in cellular systems. Therefore, from past

experience we have reason to think those systems have been designed too.

Features of life that result from intelligent design are not necessarily "directly caused by God," a view Professor Doyle incorrectly ascribes to me. Even Minnesota Fats could aim a shot that sank a dozen billiard balls after ricocheting several times. He didn't have to place the balls in the pockets by hand. If ordinary intelligent agents can use indirect means to achieve their purposes, certainly God can also.

Professor Doyle also believes that "On the issue of the Origin of Life 'gap,' irreducible complexity' is yielding. . . . I must say that he is considerably more optimistic than most scientists. For example, in his recent book, *What Remains to Be Discovered*, John Maddox, former editor of *Nature*, lists the origin of life as one of the unsolved problems facing science in the coming millennium.

This article is reprinted from the 1978 ITEST Bulletin. It was originally submitted by Dr. John Matschiner, Vice-Director of ITEST, who was then Professor of Biochemistry at The University of Nebraska Medical Center in Omaha, Nebraska. He has since retired from active teaching.

ON THE DOMESTICATION OF SCIENCE*

Dr. John Matschiner
Professor (emer.) of Biochemistry
University of Nebraska Medical Center
Omaha, Nebraska

* *This use of the expression, the domestication of science was inspired by Fr. Donald J. Keefe's expression on "the domestication of worship." It is interesting to speculate how this may be an expression — more than that, a concept — with broad social and cultural implications.*

The expectations of society: health, wealth and success.

One of the ambitions of those who preserve sperm was to have on hand the material to recreate a genius. I suspect that that vainglorious notion has not entirely disappeared; but it is based on a poor understanding of history, not to mention biology and the social sciences. These people had not heard of, or did not believe in, the dictum that no one steps into the same river twice. But beyond that, as Socrates had his hemlock, Einstein today would probably experience the same ambivalence of a society pleased and yet frustrated by modern technology. The domestication of science, which began most noticeably after World War II and now is nearly complete, brought science under the influence of a society that never understood it, tolerated it briefly, and now has sufficient control over it to define it. The result has been a new science called research, or research and development. Its banner is significance and its solidarity is based on mission.

The domestication of science, which began most noticeably after World War II and now is nearly complete, brought science under the influence of a society that never understood it, tolerated it briefly, and now has sufficient control over it to define it.

Those who saw a threat to science in the beginnings of extensive national subsidy after World War II had little to say publicly. There eventually were articulate spokesmen in defense of science when that need became unavoidably obvious; but it is significant to note that, although these people successfully interrupted the political effort to create a National Cancer Agency, for example, they did not stop the domestication process. Cancer research today is neither following a judicious plan such as might have been developed for a National Cancer Agency nor being conducted in a

manner conducive to scientific discovery. Spiegelman could reasonably point out to the Nixon administration that trying to cure cancer with a National Cancer Agency would be like trying to go to the moon without knowing Newton's laws of gravity; but neither Spiegelman nor anyone else today can easily find the conditions necessary to do basic research. Philip Handler, president of the National Academy of Sciences, called the present state of affairs half-way technology. To understand what he meant, one has to see modern science policy as something analogous to what one might visualize if the attack on poliomyelitis had amounted to emphasis on developing a better, more effective, mass-produced and cheaper iron lung. Dialysis machines, organ, transplants, engineered cells and chemotherapy are seen by scientists as interim technology.

How did the expectations of society toward science develop and how did they lead to the domestication of science? There is evidence, that the process was straightforward enough. Before World War II scientists operated with more or less organization and more or less financial support; but regardless of the degree of organization or support, the emphasis was more on discovery than on significance, more on understanding than on product. In Europe, where science was largely subsidized by industry, the desire to capitalize on scientific discovery still did not contravene science. There were, however, two notable events in this country which may be cited as examples of the transition period which led to the domestication of science. The Manhattan Project was undertaken during World War II because it was thought that enough basic information was in hand to produce an atomic bomb. In another area of national interest, the March of Dimes sponsored a concerted attack on poliomyelitis. The success of both of these missions is history; and so is the post-war response of our government; the creation of an extensive national science subsidy.

At this point the relationship between science and society still seemed orderly enough, except perhaps to astute observers; and it continued so for over a decade. Transcripts of senate hearings published about 1960 finally began to show the unrest in clear and unmistakable form. "What," a distinguished congressman would ask of a distinguished science administrator (in session and on the record), "do you think about mustard plasters? My mother used them on us whenever we had a cold." Such entries were abstracted for the amusement of readers of *Science* in the early 1960's. By this time the cost of paying for American science was growing at a rapid pace. Budgets were often gratuitously funded at more than the requested amount. Research grants were easy to obtain, leniently

administered and supplements were as near as the telephone. The dyad, science and society, was damaged and grown men were resorting to primal primary group instincts. Few scientists took the situation seriously and it was the Johnson administration that finally took the predictable steps of cutting science budgets and boldly manipulating the expenditure of those science dollars that were offered. Individuals in society were still frightened of heart attacks and cancer and pleased that their children didn't get as many of the previously crippling diseases of childhood. But that wasn't enough. A cultural lag had occurred in both science and society; and it was society that reacted first. Simply (and incompletely) put, the affluence which society experienced in technological benefits interrupted the idealistic cultural theme which had brought them about.

There have been many changes since the mid-1960's and noble efforts have been made to communicate and to understand; but the bottom line remains the same: the domestication of science. The stimulus of sputnik and the success of the space program added energy to an already spinning slingshot of technological achievement.

The expectations of science: support, support, and more support.

The notion of the dyad, science and society, implies a radical difference between the scientific community and the society of which it is a part. Under idealistic cultural conditions the difference may be implicitly accepted and not generally examined. But such is not the case during a period of conflict. What then are the characteristics of science, the community of science doers? How did their expectations of society develop and how did these expectations lead to the domestication of science?

Perhaps the most noticeable characteristic of the scientific community early on was its sense of lineage. Since science, as we have known it, is a relatively new thing, it was not uncommon for individuals to talk of identifying their place, or that of their mentors, in a line of accomplished scientists dating back virtually to the beginning of their discipline. The hierarchy of science was heavily determined by its sense of lineage.

What was the importance of lineage as a status system? Was it to ensure proper training and appreciation of science? Was it a way for young scientists to use recognized scientists for their own interests? Was it a way for recognized scientists to feather their caps? In fact, it was probably all three.

One of the effects of the growth of science was to diminish the importance of this status system; but it was the effect of federal training grants, over and above that of the growth of science generally, that diminished the sense of personal lineage even more dramatically. Although the peer review system awarded training grants to prestigious mentors wherever it could, the sheer numbers of projected trainees demanded awards to individuals and institutions that otherwise would not have been qualified. As the training program declined, Darnell and others finally proposed that federal training dollars for medical science should be restricted to 50 select universities or departments. The quality of training in a department, university or other institution had always been part of the status system of science, but it is interesting to note that this proposal emphasized the institutional aspect to the exclusion of the prestige of the mentor. Training grants are now virtually gone but in their wake there has been considerable loss of the sense of scientific prestige based on either lineage, mentor or institution.

What was the importance of lineage as a status system? Was it to ensure proper training and appreciation of science? Was it a way for young scientists to use recognized scientists for their own interests? Was it a way for recognized scientists to feather their caps? As a matter of fact, it was probably all three. Discovery is a complex and subtle activity usually unformulated in the minds of those who practice it. Furthermore, discoveries are rare and genius is rarer still, so it is not surprising that while competence, curiosity and love of science may be important prerequisites, scientists need the esteem and reassurance of associates while they work. The thrill of discovery, which is widely acclaimed as one of the greatest pleasures of life, is eagerly and competitively sought. It is the chief reward of the scientist. But in the lonely search for discovery, the scientist needs reassurance that he or she is in fact capable. Nor does this need for reassurance disappear with discovery, because scientists, of all people who look at discovery, see the serendipity and the commonplace in their own work.

In 1959, Crick wrote: "In the comparative isolation of Cambridge, I must confess that there are times when I have no stomach for decoding."

Another development which diminished the traditional status system of science occurred just after World War II. No one could predict that the discoveries in biochemical genetics during a relatively short period beginning about 1950 would coincide with the growth of

national science funding. These discoveries were among the most socially influential discoveries in the history of science. We may not yet fully appreciate the way in which the elucidation of genetic mechanisms has led, partly by shock and partly by concluding from similarities to identities, to the covert assumption that the human is a definable animal. That may be an aside, but whatever the full significance of these discoveries, science at least was changed by them. The following quote from an issue of *Time Magazine* in 1971 probably summarized the situation best: (referring to Watson and Crick's famous development of the structure of DNA) "Together, in less than two years of work at Cambridge, these two spirited young scientists showed how it is possible to win a Nobel Prize without really trying." That wasn't just a Timeism. That was the reaction many scientists had to the incredible way in which the story of biochemical genetics, or more generally, molecular biology as it came to be called, unfolded during those years. There didn't seem to be any sense to the information, or to the way in which it was appearing. Belief in the "Central Dogma" actually became for some the mark of an insider. In some situations, talking about molecular biology could be supportive, so scientists assumed superior cliques by formally talking together about the subject. In other more knowledgeable situations where that was not possible, the pressure of discovery sometimes surpassed support systems; individual scientists absented themselves from seminars, from their peers generally, and even abandoned their work. Again, the pressure was not absent in the discoverers: In 1959, Crick wrote: "In the comparative isolation of Cambridge, I must confess that there are times when I have no stomach for decoding." Compare this with the way, in 1954, he and Watson "had sat down in the Eagle at Cambridge" and drew up the standard list of 20 amino acids which we recognize to this day. In time the discoveries of molecular biology became more familiar and we entered a new phase of biological science which was characterized by a curious disinterest in discovery. The new scientist seemed content to add detail to previously existing information, almost to the point of discovery. This is contrary to one of the axioms of science: breaking the paradigm is better than spectroscopy.

Little of the history of molecular biology accords with the traditions of scientific lineage. Furthermore, there have been no enduring new lines of descent from these remarkable discoveries. Those which have appeared have generally been chaotic, institutional and sterile. Although massive funding provided the opportunity for confirmatory and extending laboratory work, particularly in the United States, few landmark discoveries in molecular biology can be ascribed to

American science dollars. Watson and Crick discovered the structure of DNA in England. Crick deduced the existence of transfer nucleic acid in England, Jacob and Monod discovered the concept of messenger nucleic acid in Paris. The first breakthrough in the genetic code by Nirenberg came in an American laboratory, but from relatively simple and inexpensive experiments. This is significant because funding has become an eagerly sought and generally accepted status symbol for scientists.

I have spoken of the domestication of science, of society expecting more and more from science and science depending more and more for support on sources outside of its own community. The examples came from my own observations as a biochemist, but I trust I speak accurately for science in a broader

context. Others will have to judge that; I cannot. Perhaps the best summary of this paper would be a comment on a statement by Eric Hoffer: "Intellectuals? Give them everything they want, everything except power." That statement makes no sense. If one understands power as influence over others, then to give intellectuals or anyone else everything they want is to give them power. The only way to withhold power is not to give them everything they want — or even the promise of it. Had that been the case, perhaps we would not have seen the domestication of science. It was the prospect of unlimited success, either way, that led to the present state of affairs. [Remember, this was written in 1978] It will be a recognition of limits that will turn the wheel of history around again from a pragmatic to a more idealistic cultural theme.

EXCERPTS FROM
ENCYCLICAL LETTER
FIDES ET RATIO
OF THE SUPREME PONTIFF
JOHN PAUL II
TO THE BISHOPS
OF THE CATHOLIC CHURCH
ON THE RELATIONSHIP
BETWEEN FAITH AND REASON

*My Venerable Brother Bishops,
Health and the Apostolic Blessing!*

Faith and reason are like two wings on which the human spirit rises to the contemplation of truth; and God has placed in the human heart a desire to know the truth — in a word, to know himself — so that, by knowing and loving God, men and women may also come to the fullness of truth about themselves (cf. *Ex* 33:18; *Ps* 27:8-9; 63:2-3; *Jn* 14:8; *I Jn* 3:2).

INTRODUCTION

"KNOW YOURSELF"

1. In both East and West, we may trace a journey which has led humanity down the centuries to meet and engage truth more and more deeply. It is a journey which has unfolded — as it must — within the horizon of personal self-consciousness: the more human beings know reality and the world, the more they know themselves in their uniqueness, with the question of the meaning of things and of their very existence becoming ever more pressing. This is why all that is the object of our knowledge becomes a part of

our life. The admonition *Know yourself* was carved on the temple portal at Delphi, as testimony to a basic truth to be adopted as a minimal norm by those who seek to set themselves apart from the rest of creation as "human beings," that is as those who "know themselves."

In fact, the answer given to these questions decides the direction which people seek to give to their lives.

Moreover, a cursory glance at ancient history shows clearly how in different parts of the world, with their different cultures, there arise at the same time the fundamental questions which pervade human life: *Who am I? Where have I come from and where am I going? Why is there evil? What is there after this life?* These are the questions which we find in the sacred writings of Israel, as also in the Veda and the Avesta, we find them in the writings of Confucius and Lao-Tze, and in the preaching of Tirthankara and Buddha; they appear

in the poetry of Homer and in the tragedies of Euripides and Sophocles, as they do in the philosophical writings of Plato and Aristotle. They are questions which have their common source in the quest for meaning which has always compelled the human heart. In fact, the answer given to these questions decides the direction which people seek to give to their lives.

2. The Church is no stranger to this journey of discovery, nor could she ever be. From the moment when, through the Paschal Mystery, she received the gift of the ultimate truth about human life, the Church has made her pilgrim way along the paths of the world to proclaim that Jesus Christ is "the way, and the truth, and the life" (*Jn* 14:6). It is her duty to serve humanity in different ways, but one way in particular imposes a responsibility of a quite special kind: the *diakonia of the truth*. This mission on the one hand makes the believing community a partner in humanity's shared struggle to arrive at truth; (2) and on the other hand it obliges the believing community to proclaim the certitudes arrived at, albeit with a sense that every truth attained is but a step towards that fullness of truth which will appear with the final Revelation of God: "For now we see in a mirror dimly, but then face to face. Now I know in part; then I shall understand fully" (*I Cor* 13:12).

3. Men and women have at their disposal an array of resources for generating greater knowledge of truth so that their lives may be ever more human. Among these is *philosophy*, which is directly concerned with asking the question of life's meaning and sketching an answer to it. Philosophy emerges, then, as one of noblest of human tasks. According to its Greek etymology, the term philosophy means "love of wisdom." Born and nurtured when the human being first asked questions about the reason for things and their purpose, philosophy shows in different modes and forms that the desire for truth is part of human nature itself. It is an innate property of human reason to ask why things are as they are, even though the answers which gradually emerge are set within a horizon which reveals how the different human cultures are complementary.

Philosophy's powerful influence on the formation and development of the cultures of the West should not obscure the influence it has also had upon the ways of understanding existence found in the East. Every people has its own native and seminal wisdom which, as a true cultural treasure, tends to find voice and develop in forms which are genuinely philosophical. One example of this is the basic form of philosophical knowledge which is evident to this day in the postulates which inspire national and international legal

systems in regulating the life of society.

4. Nonetheless, it is true that a single term conceals a variety of meanings. Hence the need for a preliminary clarification. Driven by the desire to discover the ultimate truth of existence, human beings seek to acquire those universal elements of knowledge which enable them to understand themselves better and to advance in their own self-realization. These fundamental elements of knowledge spring from *the wonder* awakened in them by the contemplation of creation: human beings are astonished to discover themselves as part of the world, in a relationship with others like them, all sharing a common destiny. Here begins, then, the journey which will lead them to discover ever new frontiers of knowledge. Without wonder, men and women would lapse into deadening routine and little by little would become incapable of a life which is genuinely personal.

Through philosophy's work, the ability to speculate which is proper to the human intellect produces a rigorous mode of thought; and then in turn, through the logical coherence of the affirmations made and the organic unity of their content, it produces a systematic body of knowledge. In different cultural contexts and at different times, this process has yielded results which have produced genuine systems of thought. Yet often enough in history this has brought with it the temptation to identify one single stream with the whole of philosophy. In such cases, we are clearly dealing with a "philosophical pride" which seeks to present its own partial and imperfect view as the complete reading of all reality. In effect, every philosophical *system*, while it should always be respected in its wholeness, without any instrumentalization, must still recognize the primacy of philosophical *enquiry*, from which it stems and which it ought loyally to serve.

Born and nurtured when the human being first asked questions about the reason for things and their purpose, philosophy shows in different modes and forms that the desire for truth is part of human nature itself.

Although times change and knowledge increases, it is possible to discern a core of philosophical insight within the history of thought as a whole. Consider, for example, the principles of non-contradiction, finality and causality, as well as the concept of the person as a free and intelligent subject, with the capacity to know God, truth and goodness. Consider as well cer-

tain fundamental moral norms which are shared by all. These are among the indications that, beyond different schools of thought, there exists a body of knowledge which may be judged a kind of spiritual heritage of humanity. It is as if we had come upon an *implicit philosophy*, as a result of which all feel that they possess these principles, albeit in a general and unreflective way. Precisely because it is shared in some measure by all, this knowledge should serve as a kind of reference-point for the different philosophical schools. Once reason successfully intuits and formulates the first universal principles of being and correctly draws from them conclusions which are coherent both logically and ethically, then it may be called right reason or, as the ancients called it, *orthòs logos, recta ratio*.

To bear witness to the truth is therefore a task entrusted to us Bishops; we cannot renounce this task without failing in the ministry which we have received.

5. On her part, the Church cannot but set great value upon reason's drive to attain goals which render people's lives ever more worthy. She sees in philosophy the way to come to know fundamental truths about human life. At the same time, the Church considers philosophy an indispensable help for a deeper understanding of faith and for communicating the truth of the Gospel to those who do not yet know it.

Therefore, following upon similar initiatives by my Predecessors, I wish to reflect upon this special activity of human reason. I judge it necessary to do so because, at the present time in particular, the search for ultimate truth seems often to be neglected. Modern philosophy clearly has the great merit of focusing attention upon man. From this starting-point, human reason with its many questions has developed further its yearning to know more and to know it ever more deeply. Complex systems of thought have thus been built, yielding results in the different fields of knowledge and fostering the development of culture and history. Anthropology, logic, the natural sciences, history, linguistics and so forth — the whole universe of knowledge has been involved in one way or another. Yet the positive results achieved must not obscure the fact that reason, in its one-sided concern to investigate human subjectivity, seems to have forgotten that men and women are always called to direct their steps towards a truth which transcends them. Sundered from that truth, individuals are at the mercy of caprice, and their state as person ends up being judged by pragmatic criteria based essentially upon experimental data, in the mistaken belief that technology must dominate all. It has happened therefore that reason, rather than voicing the human orientation towards

truth, has wilted under the weight of so much knowledge and little by little has lost the capacity to lift its gaze to the heights, not daring to rise to the truth of being. Abandoning the investigation of being, modern philosophical research has concentrated instead upon human knowing. Rather than make use of the human capacity to know the truth, modern philosophy has preferred to accentuate the ways in which this capacity is limited and conditioned.

This has given rise to different forms of agnosticism and relativism which have led philosophical research to lose its way in the shifting sands of widespread scepticism. Recent times have seen the rise to prominence of various doctrines which tend to devalue even the truths which had been judged certain. A legitimate plurality of positions has yielded to an undifferentiated pluralism, based upon the assumption that all positions are equally valid, which is one of today's most widespread symptoms of the lack of confidence in truth. Even certain conceptions of life coming from the East betray this lack of confidence, denying truth its exclusive character and assuming that truth reveals itself equally in different doctrines, even if they contradict one another. On this understanding, everything is reduced to opinion; and there is a sense of being adrift. While, on the one hand, philosophical thinking has succeeded in coming closer to the reality of human life and its forms of expression, it has also tended to pursue issues — existential, hermeneutical or linguistic — which ignore the radical question of the truth about personal existence, about being and about God. Hence we see among the men and women of our time, and not just in some philosophers, attitudes of widespread distrust of the human being's great capacity for knowledge. With a false modesty, people rest content with partial and provisional truths, no longer seeking to ask radical questions about the meaning and ultimate foundation of human, personal and social existence. In short, the hope that philosophy might be able to provide definitive answers to these questions has dwindled.

6. Sure of her competence as the bearer of the Revelation of Jesus Christ, the Church reaffirms the need to reflect upon truth. This is why I have decided to address you, my venerable Brother Bishops, with whom I share the mission of "proclaiming the truth openly" (2 Cor 4:2), as also theologians and philosophers whose duty it is to explore the different aspects of truth, and all those who are searching; and I do so in order to offer some reflections on the path which leads to true wisdom, so that those who love truth may take the sure path leading to it and so find rest from their labours and joy for their spirit.

I feel impelled to undertake this task above all because of the Second Vatican Council's insistence that the Bishops are "witnesses of divine and catholic truth".(3) To bear witness to the truth is therefore a task entrusted to us Bishops; we cannot renounce this task without failing in the ministry which we have received. In reaffirming the truth of faith, we can both restore to our contemporaries a genuine trust in their capacity to know and challenge philosophy to recover and develop its own full dignity.

There is a further reason why I write these reflections. In my Encyclical Letter *Veritatis Splendor*, I drew attention to "certain fundamental truths of Catholic doctrine which, in the present circumstances, risk being distorted or denied." In the present Letter, I wish to pursue that reflection by concentrating on the theme of *truth* itself and on its *foundation* in relation to *faith*. For it is undeniable that this time of rapid and complex change can leave especially the younger generation, to whom the future belongs and on whom it depends, with a sense that they have no valid points of

reference. The need for a foundation for personal and communal life becomes all the more pressing at a time when we are faced with the patent inadequacy of perspectives in which the ephemeral is affirmed as a value and the possibility of discovering the real meaning of life is cast into doubt. This is why many people stumble through life to the very edge of the abyss without knowing where they are going. At times, this happens because those whose vocation it is to give cultural expression to their thinking no longer look to truth, preferring quick success to the toil of patient enquiry into what makes life worth living. With its enduring appeal to the search for truth, philosophy has the great responsibility of forming thought and culture; and now it must strive resolutely to recover its original vocation. This is why I have felt both the need and the duty to address this theme so that, on the threshold of the third millennium of the Christian era, humanity may come to a clearer sense of the great resources with which it has been endowed and may commit itself with renewed courage to implement the plan of salvation of which its history is part.

[The full text of this Encyclical can be found on the World Wide Web at <http://www.vatican.va>]

A Taste of the October Workshop on The Future of The Family/The Family of the Future

Peggy Keilholz, MA, MSW
9700 Cisco Drive
St. Louis, Missouri 63123

When Charles Dickens wrote *A Christmas Carol* in 1843 the society in which he lived and for which he wrote was in the throes of the industrial revolution. He used Ebenezer Scrooge to give us a view of the consummate narcissist, a man isolated from himself, his family, his friends and his community; a man unconcerned about the suffering people around him. In the story three spirits visit Scrooge. Two of them speak to him as they show him the realities of the past and the present. The final nocturnal visitor, the Ghost of Christmas Yet To Come, does not speak; it shows him how things will turn out if present trends continue and points to his final end.

Such is our situation. The past and the present can speak to us; the future cannot. We can identify trends and speculate about what they may mean and to where they will lead. We might ask, as Scrooge did, "Are these the shadows of the things that Will be, or are they shadows of the things that May be, only?"

Technological choices and choices about how to live with

and among each other are ancient dilemmas for human beings; we are not exempt any more than our ancestors were. The choices we face are very complex. The tendency is to try to use scientific methods, so useful in chemistry and physics, on systems in which the variables are numerous and the ability to limit inputs impossible. For example, the evidence tells us that single-parenting, *on average*, leads to poor outcomes for children. Is it even meaningful to ask, "How do we solve this problem?" Might we learn more from studying how families stay together, how individuals develop responsibility?

The nation has an interest in having healthy families; they are still the cornerstone of democracy and "essential to the sound development of U.S. children and communities." Whatever can be done through community organizations, churches and mutual help groups to support intact families is time and money well spent. Efforts aimed at increasing the economic and social well-being of single-parent households need the support of the ... community especially those who can offer employment, mentoring,

modeling. Programs for prevention and treatment of addictions need to include family... Treatment programs ... ought to involve the family and offer long-term support to recovering individuals and their families. Domestic violence is a continuing tragedy for all the family members involved — spouses or partners and children. Integrated community programs uniting the legal system, the providers of services to the abused, the providers of treatment to the abusers, and the addictions treatment specialists would offer hope to all involved. If we (say) that certain human behaviors cannot be treated or corrected, we subject the people with those behaviors to alienation from the community. The alienated do not go away just because we have rejected them.

Religious leaders, both the ordained and the lay, have an obligation to preach the Word and the word “whether convenient or inconvenient” (2 Timothy 4: 2). Rampant materialism, unhealthy individualism, and unfettered narcissism need to be challenged. Acquiring all the latest technology, all the best and newest gadgets may actually

weaken the family. Borgman writes,

The moral fabric of family life is typically patterned not so much by practices as by acquisitions, by material decisions . . . rather than by practical decisions. Of course, parents do not make their fundamental decisions in a vacuum.

Parents face such fundamental choices regarding careers, material well-being, the intrusion of technology into the family. Can they set limits, say “no,” say “enough”? To participate in church and community programs requires the capacity to set limits with the job, to be able to turn off the cell phone, the pager.

If, as Strauss and Howe suggest, the “fourth turning,” a “crisis,” is imminent, those individuals and families who will survive and thrive in the twenty-first century, will be those joined in communities which promote, sustain, and link the strengths of each person and each family to other individuals and families.

NEW MEMBERS

BEARDEN, PhD, Mark; 1275 Rock Avenue, #G-2, North Plainfield, New Jersey 07060-3551 U.S.A.; Computer engineer/Research, Bell Labs, Lucent Technologies/Sftwr R. Dept; Apologetics, Economics, Political Science; ☎ (908)-582-6050; E-MAIL mbearden@bell-labs.com.

ROBERTS-KIRCHHOFF, PhD, Liz; Dept. of Chem. & Biochem - PO BOX 19900, Detroit, Michigan 48219-0900 U.S.A.; Assistant Professor, U. of Detroit Mercy; Biochemistry, pharmacology; ☎ (313)-993-1021; E-MAIL; FAX (313)-993-1144.

PENDER, PhD, Professor Michael J.; 20 Symonds Street, Private Bag 92019-U. of Auckland/Dept. C&R Engrng., Auckland, New Zealand; Prof. of Civil Engineering, University of Auckland; Effect of 20th cent. sci. world view on rel. belief; ☎ +64 9 373 7599 ext.7919; E-MAIL m.pender@auckland.ac.nz; FAX +64 9 373 7462.

SIMONI, Ms. Fiorella V.; 8906 Garden Gate Drive, Fairfax, Virginia U.S.A. 22031; Student chemist/theologian, John Paul II Institute/George Mason Univ.; Bioethics, theology & science; ☎ (703)-280-0749; FAX (703)-280-1971.

CHANGE OF ADDRESS

BLASCHKE, MD, John A.; 1110 N. Lee, Oklahoma City, Oklahoma 73103 U.S.A.; Physician, Bone and Joint Hospital; Arthritis, chronic pain management; ☎ (405)-552-9460; FAX (405)-552-9443.

ISIDORE, OSB, Brother; St. Gregory's Abbey, Shawnee, Oklahoma 74804 U.S.A.; Professor, St. Gregory University; Computer science, architecture, horses; ☎ (405)-878-5486; E-MAIL brisidore@sgc.edu; FAX (405)-878-5114.

MC NAMARA, SJ, Fr. Daniel J.; Manilla Observatory - Box 122, UP Dilbman, Quezon City, 1101 Philippines; Jesuit/astrophysicist, Ateneo de Manila (Manila Observatory); Atmospheric physics; ☎ (632)-426-5921 to 5923; E-MAIL daniel@admu.edu.ph; FAX (632)-426-6141.

MATSCHINER, Dr. John; 7915 N. 30th St., Apt. 205 R - Florence Home, Omaha, Nebraska 68112 U.S.A.; Biochemist (emeritus), U. of Nebraska Medical School; ☎ (402)-455-4193.

MURPHY, RSM, Sr. Mary Ellen; 9471 Annapolis Road, Lanham, Maryland 20706 U.S.A.; Vice Pres., Academics, St. Joseph's College; Science & Religion, life in outer space.

MURPHY, SJ, Fr. Joseph; 7625 N. High St. - Pontifical College Josephinum, Columbus, Ohio 43235-1498 U.S.A.; Teacher Priest,

Pontifical College Josephinum; Systematic & moral theology, med. ethics; ☎ (614)-436-1686; E-MAIL jmurphy@pcj.edu; FAX (614)-885-2307.

PITTAU, SJ, Most Reverend Joseph; Congregation for Catholic Education, Vatican City, Vatican 00120 (Europe); Secretary: Congregation, Education, Seminaries and Institutes; ☎ 06/67011.

RECK, SJ, Fr. Donald W.; Residencia Beato Pedro Fabro, Almagro 6, Madrid 28010 Spain; Theologian, Saint Louis University; Theology/Campus Ministry; E-MAIL Reckd@spsmail.slu.edu.

SHARPE, PhD, Kevin J.; P.O. BOX 1121, Oxford, OX1 1FH United Kingdom; Editor, Science & Spirit Newsletter; E-MAIL ksharpe@science-spirit.com.

VAN HOVE, SJ, Fr. Brian; 11901 Wornall Rd. - Avila College, Kansas City, Missouri 64145-1698 U.S.A.; Priest, Chaplain, Avila College; ☎ (816)-942-8400, #2423; (h) 531-0806; E-MAIL vanhoveb@juno.com.

WHITE, MD, PHD, Dr. Robert J.; 2895 Lee Road, Shaker Heights, Ohio 44120 U.S.A.; Neuroscientist, Case Western Reserve University; Brain-mind-soul; ☎ (216)-561-3666; FAX (216)-778-5616.

WOLFERSTEIG, Mr. Robert; 1922 E. Dawn Drive, Tempe, Arizona 85284 U.S.A.; Public Relations, Triwest Healthcare Alliance; Medical ethics; ☎ (602)-491-0811; E-MAIL AKEB39B@prodigy.com.

E-MAIL OR PHONE CHANGES

BOYLES, Robert	PHONE: ((310)-378-8263; E-MAIL leaettafay@aol.com
FREESE, Raymond	E-MAIL ray@freese.net
HOGLE, Sr. Jean	E-MAIL mksrtai@ms17.hinet.net
JELLY, Fr. Frederick	E-MAIL jelly@msm.edu
JOHNSON, Sterling	E-MAIL kjohnson@tvmdl.tamu.edu
KEEFE, SJ, Fr. Donald	E-MAIL djkeefesj@mindspring.com
KERTZ, Alois	E-MAIL alfke@aol.com
KITAHARA-FRISCH, Fr. Jean	E-MAIL kitahara@hoffman.cc.sophia.ac.jp
KOESDARMINTA, Dr. A.	E-MAIL perpust@home.unpar.ac.id
KRISCHE, Fr. Vincent	E-MAIL frvince@st-lawrence.org
LSPS Seminex	E-MAIL lspsaustin@ecunet.org
MARTIN-PATINO, José Maria	E-MAIL correo@fund-encuentro.org
MATIS, SJ, Fr. Eugenio	E-MAIL matis@vatiradio.va
MURPHY, Bishop Michael	E-MAIL mjm@velocity.net
MÜLLER, Francisco	PHONE: (305)-264-7062; E-MAIL varelaacademy@iscnet.net
MUSCOLINO, Rev. Frank	E-MAIL saintst@bellsouth.net
O'CONNELL, SJ, Fr. Daniel	E-MAIL doconn1@luc.edu
ORNA, OSU, Sr. Virginia	E-MAIL Mvorna@chemheritage.org
OSWALD, Prof. Claire	E-MAIL coswald@csm.edu
PROVENZANO, Dr. Joseph	E-MAIL joepro@smartlink.net
SALIWANCIK, Mr. Roman	PHONE: (828)-693-0786
SMITH-MORAN, Rev. Barbara	E-MAIL smithmoran@earthlink.net
SQUIRE, James	E-MAIL jasquire@anet-stl.com
WANZONG, Robert	E-MAIL rwanzong@west.Raytheon.com
WELDON, Dr. Virginia	E-MAIL weldon@csab.wustl.edu
ZETLMEISL, Dr. Michael	E-MAIL michael.zetlmeisl@bhi.bhi-net.com

IN MEMORIAM

Fr. Vincent Daues, SJ
Mr. James McFadden

We also ask your prayers for ITEST members who are ill. May they feel the restoring hand of the Lord.