



# BULLETIN

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Let me wish you a Joyous, Peace-filled New Year. We are again at the beginning of our to-be-fulfilled future. We are starting with a somewhat clean slate but we still have the problems (and the joys) we have inherited from the past. While we cannot change the past, we can live into the future in a positive way.

At the end of September we will be holding a meeting on *Globalization in the 21st Century*. We have four of five speakers, including Dr. Jeffrey Arnett (University of Maryland) on the role of anthropology, sociology and psychology; Dr. Robert Collier (University of Arizona) on science and environment; Dr. Edward O'Boyle (Louisiana Tech University) on economics; Dr. Jean-Robert Leguey-Feilleux (Saint Louis University) on political aspects. We need a theologian and we will keep trying to recruit one.

We are also planning to publish a revised issue of *Readings in Faith and Science*. We shall be calling it *Readings - II*. How's that for originality? We shall also be actively seeking to enroll younger members in ITEST. A glance at our membership list would be a comment on the graying of ITEST. Unless we are willing to let the ITEST effort die, we need a confident effort to recruit younger members. At least we can all pray for the successful outcome of the plan to renew ITEST. In the meantime we can all take joy in our ability to speculate about the excitement and wonder of the eschaton. Why are there so many galaxies in our universe? What's the purpose? Could it be that the more "boring parts of the universe" -- the parts where nothing seems to be happening -- are like the parts of the human genome for which we can assign no purpose? Are they unimportant? I doubt it but we can still speculate about it. That to me is the real blessing behind the universe having a purpose right from the start. Even more, having a purpose means having one with a purpose, namely, God who is all in all. That's why Darwin is not my favorite thinker. I have no problem with evolution but I have a real problem with Darwin. He's incapable of telling us where all this is going - beyond vaguely pointing to "something" down the road.

Have a blessed new year. Remember ITEST in your prayers. May God's blessings be with you.

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## ANNOUNCEMENTS

1. A number of you have taken advantage of paying your membership dues by using a credit card, either *MasterCard* or *Visa*, the two cards we are authorized to accept at this time. If you have not renewed yet for calendar year 2003, now is the time to act. Just a reminder: We will be sending out second renewal notices toward the end of January.

2. *The ITEST Premier Club 2003*: As promised, the drawing for the three winners of the cash prizes from the ITEST Premier Club took place on the last evening of the workshop on *Advances in Neuroscience* in late September, 2002 at the Shrine of Our Lady of the Snows, Belleville, Illinois. A college student from the University of Kansas drew the names and the winners were announced to the workshop participants. First prize: Frank A. Andrews; Second prize: Cyril Hanisko and Third prize: Elsie Postiglione (by her family in her memory). These three winners just kept on giving, however, opting to re-donate their winnings to ITEST.

The ITEST Board and Staff express their appreciation to all of you who donated so generously to the Premier 2003 Club. Some members who could not donate the requested \$1,000., gave smaller sums as they were able. Although they are not listed as Premier members, they are still greatly appreciated for their generosity.

3. The workshop on *Globalization in the 21st Century* will be held September 26-28, 2003 at the Shrine of Our Lady of the Snows, Belleville, Illinois. As noted in the message on page one of this issue, the scope of this topic is wide but the planning committee has narrowed it to five areas. We are hard pressed at the moment to find a theologian who will tackle this topic. Those we have approached either have declined, professing insufficient knowledge of the area to write about it or have not responded yet to our queries. If any of you would like to suggest a theologian with courage to jump into the fray, we would be glad to hear from you.

## BEAUTY

**FR. ROBERT BRUNGS, SJ** In 1993 ITEST celebrated its 25th anniversary at Mont Marie in Holyoke, Massachusetts. Now, almost ten years later, it might be helpful to reprint some elements of that meeting. This meeting really ought to be reprised but I have neither the time nor the talent to attempt a meaningful summary. I seriously doubt that I can "pull off this reprise." So I won't try. Instead I'll pick almost at random several of the mini-essays that were given there on the subject of Beauty. I could just as easily have chosen any other set of essays with almost the same remarks. There was an amazing unanimity present there. Looking back ten years and forward ten years, I hope this will be helpful to all the ITEST members. I know that not everything will be agreed upon by all the members. But I do hope that everyone will take something from the essays and run with it.

"*Beauty is in the eye of the beholder.*" How many times have we heard that said? It may even be true -- at least to some extent or other. At one time the United States Supreme Court more or less agreed with the Justice who remarked that we might not be able to define obscenity but we know it when we see (or hear) it. The same may be true of beauty -- we recognize it when we meet it. But do we? Are we too cultivated, too sophisticated, to see real beauty -- or are we not cultivated enough? Do we really see the beauty in the sunrise or sunset? Do we see the beauty of the human form made

in the image of God? Do we really see the beauty in the heavens? Is beauty also in the thing rather than just in the eye of the beholder? Does beauty exist even if no one has ever seen it?

Or do only beautiful things exist? Clearly beauty may present at least philosophical problems, but then what does not? Is beauty merely an abstraction? Are the only things that move us are beautiful things? These are philosophical questions which I will not even attempt to answer. My final question is: what do we mean when we say God is beauty. Perhaps Father Bert Akers, SJ may clear up this point when he speaks on transcendentals. Clearly beauty is concerned with the physical. To what extent? Does it give us pause to somehow equate God with a human concept of beautiful things? But humans, as physical as we are, are "in the image of God."

I remember an incident when I was working on my dissertation forty years ago. I was photographing Laue transmission x-ray patterns of monocrystalline boron. I had seen the x-ray patterns of many other elements, including the heavier elements like tungsten. As I recall, they all had scattered patterns of dots in relatively simple forms. But as the photos of boron came up out of the developer I could see at a glance they were not at all like the patterns of tungsten. They were much more complex than any I had ever seen. In fact, they were not only highly complex, they were also highly

symmetrical. I declared them beautiful. In fact, I was in awe, almost lost in contemplation. I realized that these were almost certainly the first x-ray photographs of monocrystalline boron ever taken. That meant I was most probably the first human being to gaze on the photos of this element -- and declare them beautiful. Did this beauty exist before I saw it? I believe the question answers itself. Of course, it did -- from the beginning of boron. How could it not?

It seems at first blush that truth and goodness (and even being) are relatively uncomplicated constructs in comparison with beauty. In English, beauty is almost impossible to discuss straightforwardly. It is not convertible with other words like attractive, pretty, cute, lovely and so on. Each of them has a nuance that separates them from the notion of beauty. Beauty is rather a more intuitive construct in my mind. But is it merely an abstraction? It is certain that beautiful things exist; does beauty? How can we call God beautiful; how can we call God Beauty? Yet so he is called and so he is. Maybe we can get a somewhat better grip on what

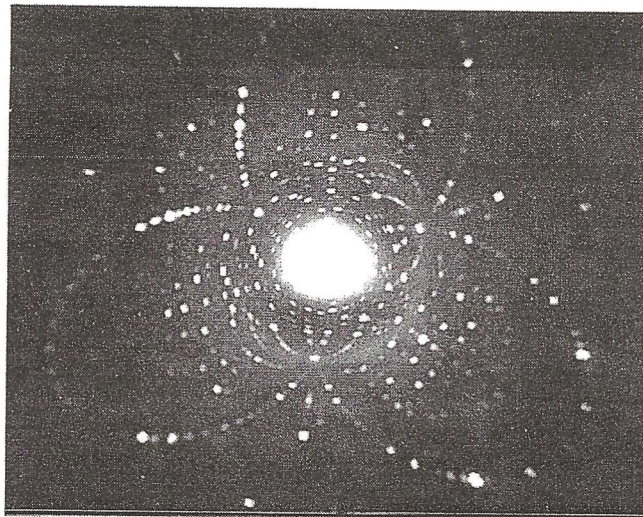
**FR. BERT AKERS** I'd like to entitle this talk *Lookin' Real Good: Reflections on Beauty and the Transcendentals*. The topic for this Conference is assuredly large enough, challenging enough, even for the formidable array of talents that gather here. But not so long ago it would have seemed a most unlikely topic even for the ITEST family. Though perhaps for very different reasons, neither the saints nor the scholars among us — and they are legion — would have been amused.

Out there, in the secular wilderness, those legions would have carried on as they have these past several centuries — with the shriek of the desert-demons: "what have we to do with thee?" One had been led to believe that serious endeavors, scholarly and otherwise, had been safely immunized from debilitating contact with the likes of religious faith and — good grief — aesthetics.

After all, isn't that what it was all about? Bacon, the New Learning and all that: objective truth, untrammelled research, liberation from the primitive, pre-scientific gropings of magic and myth and superstition and religious dogmatism; and all those aberrant and abortive and distortive foreshadowings of true knowledge.

Yes, but like many another before and since he made the big mistake of counting out religious belief and the Beautiful as if these were merely historical stages in the evolution human cognition; ways of seeing, thinking, knowing out of a bygone era, already superseded by more advanced development, now that Man has come

beauty is and what it entails from some of the papers from the Convocation on Beauty. Let's try.



x-ray photograph of Monocrystalline Beta Rhombohedral Boron.

of age — as the enlightened spirits of the 18th, 19th and early 20th centuries felt supremely confident they had.

In the short run, religion in general, Christianity in particular, turned out to be a relatively easy target. Isn't it always. But the Beautiful? Rid the world of the magic flute and the siren song; the catch in the throat and the dart in the heart caused by something we lamely call Beauty? Just take a casual nonscientific poll asking: How many of you would like to be good, pious, virtuous? Now how many would like to be beautiful? If the Church was *l'infame*, the Beautiful would prove to be *l'impossible*.

Two thousand years before the Modern Age, Plato with a heavy heart felt necessitated to banish the "poets" (what we might roughly call "artists") from the ideal Republic; Plato, who loved Homer, and who is himself, of course, one of the greatest poets of the Western World. But, darnit, it follows as the night the day: if it isn't True, it cannot be Good. So, *'raus mir!* I mean, statues are only deceptive imitations of Reality (aren't they?). And who can sleep on a painting of a bed? That's fooling the citizenry (isn't it?) And, worst of all, the poets: the tricky wordbirds, weavers of wind; making us weep and cheer and quake: for the fallen comrade, the defiant maiden, the anger of the gods; and none of it is Real (is it?).

It's dangerous, potentially subversive, hard for the

Guardians to control. Enervating too, conjuring up before our eyes the fearsome warrior saying farewell to his wife, until the bobbing plume on the bronzed helmet frightens the child in her arms, and he gently comforts him; and the old dog, rheumy now of eye and arthritic of haunch — old dog wagging its tail in slow recognition of his long-lost master, Odysseus-come-home,; and in the great hall the fiery gleam of the goblets filled and filled again with the brew that is true.

Or as Jimmy "King of the Road" Rogers put three thousand years later: ". . . only three things worth a dime/Old dogs, and children, and watermelon wine." That's a long life for something that is neither True, nor Good, nor Real. And what it anyway, this stuff? And where is it, for that matter? And why does it touch these chords deep within us?

This is the discussion that has pervaded our culture from the beginning, even until now, testing our values, our understanding of Reality itself. That perennial discussion, that Great Conversation, is what we call here for brevity: the Tradition. And that Tradition is itself a thing of great beauty, ever ancient, ever new, embracing insights hammered out over centuries and fresh as tomorrow; conceptual tools to get a grip on the elusive but centrally important categories of Being: Unity, Truth, the Good, and the Beautiful, and their remarkable interrelationship. But it is a Tradition, indeed a way of understanding, no longer very familiar to us. Though as we said, we seem to be groping, in the early decades of the "post-modern world" towards its rediscovery.

And so after consulting with a number of the other presenters, we thought it might be helpful, as a kind of introduction to our program, as a way of providing some common ground and some working tools, to recall a few of the key terms and insights of that tradition.

For many of you this will be little more than nostalgic review of good old PHIL 101. Nevertheless, for those of you who may have misplaced your notes, or in case you've forgotten how much fun metaphysics was the first time, here goes.

### I. The Transcendental Imperative

The classic Transcendentals are very helpful and easy, once you get used to them. But they have a forbidding sound, even in English: the One, the True, the Good, and the Beautiful. Sounds like a Clint Eastwood "Spaghetti Western." That's why we use the Latin names: *Unum, Verum, Bonum, Pulchrum*. Less contemporary distortion. But even less user-friendly.

Let's begin instead with the hundreds of words we use all the time that are almost Transcendentals. We can't live a waking hour without them. Especially these days when the fields of Advertising and Public Relations and Sportscasting have deluged us with them, words that "work"; probably because they touch-off deep vibrations in the human psyche. "Transcendentaloids" we might call them.

Take the word "Right." Sometimes it means appropriate, apt, suitable, comfortable, expected, right; as in "Pepsi Belongs". That tie is right for you. It can mean correct or true. That clock isn't right. It can mean unjust, unfair, not good: you took my lunch and that's not right. It can take on an almost Biblical solemnity as in "all's right with the world"; and preternatural good stuff as in "The Right Stuff." When Bill Cosby says it with sardonic disbelief, he means "you're not serious," "this is not for real." "For Real" is good metaphysical stuff.

"Sound as a dollar"? Well, that's one we haven't heard for a while. But a whole thesaurus of old-fashioned values-words have been reinstated. Like honest, solid, genuine, authentic and even square. They also have an such an aura of down-home sincerity and rock-solid trustworthy, you almost feel like plighting your troth or something. It's even hard to distinguish the product from the pitch; that's why they work. The Real and the Good and the True become part and parcel of each other as you go up the ladder of Quality. And "Excellence"? Why nary a University or a lube shop in the land but has put Excellence near the very top of its Goals (or Objectives, I forget).

"Quality" was seen (re-discovered really) by the brilliant hero Phaedrus not only as the ultimate, over-arching "something" (the Tradition having been lost) that not only "transcends" the disastrous Subject/Object dichotomy, but unites the perspectives of Oriental wholeness (keep it together: Zen) and Western rational analysis (take it apart: the art of motorcycle maintenance.)

And so for countless others. In fact in all of the swell, keen, neat, groovy, cool words that each sub-generation serves up, we recognize some very old bits of the Tradition peeking through: And that of course is *vere dignum et justum*. The point is first of all that we cannot live without them. Second that they loom so large, are so connatural to us that we can hardly see them. And third that, however skeptical we may have learned to be about values and truth (let alone metaphysics), our commonest terms point unfailingly towards the classic Transcendentals.

And when we understand what they are about, we find that we have also achieved an extraordinary perspective

— a kind of "best seat in the house" — into the Beautiful itself and its profound relationship, no longer so surprising, to the Sciences.

## II. The Transcendentals: *Unum, Verum, Bonum*

Metaphysics is not tricky or difficult. Being is connatural to us as is air for breathing. But it is about a level of Reality which is not the preserve of any other discipline. It has to do with a different kind of intelligibility. And therefore a different methodology, a different way of "seeing" what is nonetheless "there." Rather than requiring super-intelligence (as currently evaluated), it requires rather an ability to perceive the obvious. It's closest respectable parallel these days may be the "Eureka" experience of scientific discovery; or seeing the cube change direction and the profiles or the vases pop out clear as anything in *Gestalt* experiments.

The modern person has to try very hard to counter the pervasive habits of mind that have made philosophical reflection nearly impossible: false objectivism and subjectivism; exaggerated empiricism and idealism; scientism, reductionism, quantitative thinking and so on. The monster progenies of these fundamental errors will pervade the general culture for many decades, though we are already well into the beginnings of a new cultural epoch. That is why a recognition of "The Beautiful" has reawakened. And if The Beautiful, can the classic Transcendentals be far behind?

The three classic Transcendentals, then, are designations of Being, of Reality, but from a particular perspective. Each is coterminous with Being, intensively and extensively, but under a particular "formality." The sequence is traditional and not arbitrary; and, of course, treated here with dangerous brevity. For the One, the *Unum*, points to the ultimate, irreducible, beyond-which-nothing, the integrity of the Reality-in-Itself. Whereas the True, the *Verum*, affirms the same reality, but as it is known or is knowable by Intellect. And the Good, *Bonum*, is Being as desired-by or graced-by, or created-by appetite or "will."

These three designations are identifiable with the Reality itself, with the Being under discussion (the tree, the knife) but each from a different perspective, each with a different emphasis. Of course, we cannot explore the depths or even clarify the more technical meanings of the terms. But even using the terms as we would in everyday speech, we will not be too far wrong. In fact, in saying something like, "This is really good," we would have pretty well summarized the entire classic Tradition about the Transcendentals: the One, the True, and the Good.

*Unum*. The One. To say "this" or "that" or "this thing" or "this chair" or "Fido" is our unsophisticated way of designating the unity of a Being. This is its most fundamental identity. "It" is this thing and no other. The pointing, the "naming" of this Reality both recognizes and designates its uniqueness as a Being.

The physical composition (atoms, buttons and sleeves) has absolutely nothing to do with the "entity" that is a shirt. We note two things: the incredible creative power of "naming" because it is in naming that we order our world and "construct reality." The naming-power (sensory and intellectual cognition) is (in its way) infinite but by no means arbitrary. A sow's ear is not a silk purse. And finally,

And finally we note that our power to designate, to name, to "carve out" is fundamental to our way of knowing, to our way of "ordering our world." After all, what is a "tree," where does it begin or end? We more or less arbitrarily include the roots and the leaves. We more or less arbitrarily exclude the earth and the air and the sun (and the solar system and galaxy attendant thereon and so on). This is the phenomenally creative power of our three-pound brains. In this sense Man is the Measure.

Or perhaps better, the Measurer. Because the overwhelming preponderance of what he measures is "out there" as a "given"; and he will mis-measure to his peril. But "measure" he will, badly or well. Man is a born scientist. And metaphysician.

What is even more intriguing is the unfailing reach of Science for unity. Science as a whole, each particular discipline, each tiny project within any splinter of a science, embodies the drive (by whatever name) for unity, for the One: the one formula, the one explanation, the one model. God may very well play dice with the Universe; it is only if He keeps changing the game (playing dice with the dice) that there can be no ultimate intelligibility in the Universe — and that defies the last best hope of our being.

*Verum*. The True includes both the inner (ontological) authenticity: it really is a can opener, not a bomb; and its relation as known, to an intellect. The spectrum of meaning merge into one another. But even as we understand the term in ordinary usage, it scarcely needs discussing that far from being one more goal among many, it is Truth that defines the very nature of science itself.

*Bonum*. A little trickier because by and large we don't ordinarily use the term "good" in its deeper metaphysical senses. But again, even on the more pre-philosophi-

cal level, it is almost always the marvelous natures of things, whether minerals or mosquitos, or the benefits that can come from them, e.g., wealth or health, that lead us to devote enormous resources to science. And, of course, in the classic Western Tradition, knowledge itself is among the highest, if not the highest, Good of the human being. Again, the judgment of worth is totally subjective (only a subject can judge); highly creative and free; but very far removed from "arbitrary."

Neither are the Transcendentals themselves arbitrary. They are the way Being is, Reality is when we look at it at a metaphysical level. In the Reality we find, in the Reality we fashion, the One, the True, the Good are absolutely fundamental. To say they are surprisingly congenial is something like saying the glove is surprisingly suitable for the hand. That in a very profound sense is who we human beings are: knowers and finders and fashioners of the One, the True and the Good. Transcendentalists. The Trinitarian implications (Origin, Intellect, Will and so on) were not lost on the early Christian writers; is it conceivable that the handiwork not image-forth something of its Maker?

### III. The Fourth Transcendental: *Pulchrum*

Then there is the fourth, the Other Transcendental. It is family, but not a member the family is proudest of. When included at all it is always placed fourth for a number of reasons. First of all, it is metaphysically impossible that a Being not be One, True, and Good (endowed with inner perfection, i.e., act). But not all beings are beautiful, or not equally so, or not permanently so, as Isaiah ("Beauty is a fading flower"), not a few sad ballads helpfully remind us. Secondly in ordinary usage, Beauty at least includes physical beauty in the material, sensible world; less noble therefore than purely spiritual Being. Third it at least includes the activities of the "practical intellect" (doing e. g., as in behavior; making as in the arts). In the Tradition the "speculative intellect" (just knowing, understanding etc.) ranks higher. And, having said all that, we should remember, too, that for a thousand years or so "the arts" were almost entirely in the keeping of Church-related persons and institutions. The Church had had ample opportunity to learn, confirm that by and large it was not the One, the True, or the Good that distracted the prayers and bedeviled the dreams of St. Anthony and many another since.

This is not about prudish delicacies. There are powerful tensions at play. With the Beautiful we are at the very heart of the mystery of Man in the Universe, Mind in Matter, Spirit in the World, Grace and Nature. Throughout the Western Tradition, music, for example, has not only been bracketed with grammar and mathe-

matics (the *Trivium*) as requisite training for "higher studies" especially philosophy. ("Euclid alone/Has looked on Beauty bare" — Edna St. V. Millay); but also prized for the formation of taste and character ("tuning the lyre of the soul"), and, of course, bodily grace and so on. Music is at the same time recognized as the most powerful and seductive of the arts in beguiling the spirit, inflaming the passions.

Elusive, mysterious, intoxicating, even threatening; in context a blessing or a bother, but undeniably Real. And as we saw these rich overlays and interplays are reflected in the infinite freshness and subtlety of even our everyday language, and chiefly in Two remarkable Transcendentaloids.

First, "elegance." And it is not at all hard to see why this notion provides a wealth of insights for our reflections on Science and the Beautiful.

The term is doubly remarkable. First of all because it is used with ever greater frequency in the hard sciences and mathematics, areas of knowledge once assumed to be the farthest removed from subjective evaluation. That was itself of course always a very "subjective" delusion. But the impossible myths prevail about how science is done; the triumph of experimentation and observation (*Eppur, si movee*: it does too move!); and the notion that science (or at least technology) is radically "pragmatic": it's what "works" that counts. Today it recognized that all sorts of things "work." Any number of mathematical solutions might "work." Any number of formulas or hypotheses might "work." But like all sorts of Rube Goldberg gizmos, and packing by shearing off the overhang out of the suitcase, they are lacking in "couth." They are not "elegant." And for that reason alone they are suspect and probably not the right answer, the best solution. This is an extraordinary breakthrough (re-awakening?) in human consciousness.

And the second thing is that when this most elusive term is used, there seems to be a surprising agreement about what it means; among people who can't stand to agree on anything: ego-types like celebrities, fashion-designers, academics. Both the bearded and the shorn seem to recognize an elegant goatee when they see one.

And then, "fair." Always one of the truly great words of our culture. And now in the post-Christian era, one of the few value words one is allowed without seeming to be incorrect, judgmental or in direct violation of something. We have (kids seem born with!) an incredibly developed sense for what is fair and what isn't. What is fair (piling on? assault rifle?) changes; that some things are and some thing are not fair is close to what the Tradition would call a "first principle." And

where they don't already exist, we seem compelled to make up some do's and no-no's for games (forgot to step on the plate!) or rather odd taboos (stepped on a crack!).

It is not by chance that the word in English also means "beautiful" ("Monday's child is fair of face") but "beautiful" in one of her countless epiphanies. No more so than its equivalents in Greek (*kalon kai agathon*) and in the Tradition, intentionality developed a whole cluster of wondrous and scarcely distinguishable gifts: blessed, fortunate, gifted, graceful, harmonious, favored, endowed, pleasing, loved, and so on...

What then is the Beautiful? It will of course lie beyond definition. That is the way of the transcendentals (and near-Transcendentals). What more ultimate category could we define them in terms of? We must remember that any number of the medieval philosophers wrote whole books on the topic, often as they pursued a traditional area of investigation: "The Names of God." It is in this larger context that the brilliant, quotable, but dangerously succinct "definition" of Aquinas needs to be understood: *Quod visum placet*. The mini-maxim serves wonderfully as a starting point on all sorts of related topics ranging up to and including the Beatific Vision. It should never be thought to close the discussion. Thomas (an exceptional poet in his own right) like many another before and after him grappled with the mystery.

Up to a point, the Tradition is consistent. The link with the other Transcendentals is clear, but there are some differences. Something beautiful must have:

*Unity* It has to be whole, integral, not defective. Together. Not broken, distorted, deformed. Everything is there that ought to be there. And no more. No clutter. More is not necessarily better.

*Proportion* What is there should be ordered, proportioned, in proper harmony. Not a tiny table on huge legs, not two arms on one side and none on the other.

*Clarity* And the third is traditionally called clarity, splendor, radiance, the *splendor formae*, this shining forth of the inner mystery of the thing. It is the difference between great art and competence, craftsmanship. Something like "star quality." The undefinable "It": some have it, some don't. Whether it's a person, a work of art, a song, a ballpoint pen, a particular model car. Beyond a certain point it is elusive, undefinable, unpredictable. But to an amazing extent, you'll know it when you see it. It is, as we say, simply beautiful.

Here again, as with the classic Transcendentals, it is intuitive. But it neither tautological (saying the same thing in different words; or purely subjective (you can arbitrarily say anything). But, of course, there is "taste" and "taste," both for the artist and the scientist. When in 1953 Watson and Crick saw the double helix, they said, "It's beautiful." And they knew they had found it. How could anything so beautiful, simply beautiful, physically, conceptually, not be the way it really is?

What we have here is not nearly so much a change in methodology, as a change in the underlying epistemology; or perhaps more accurately a recognition and legitimation of an epistemology that has been there, essentially, all along.

The search for the Unity, Truth, Perfection has driven the scientists and pervaded the sciences then and now and always. How could they not? So it would seem does the Beautiful, in mask and lab coat, whatever. It is the recognition that she belongs, the legitimation of her presence that seems so very promising.

As the Transcendentaloids of the recent past might have it. . . A-OK. . . Lookin' Real Good. . . Beautiful!

**DR. ANNETA DUVEEN** I'm a secular Franciscan and my children call me a clay pusher. Plato hated sculptors. So, they're always pulling me down to size by saying: "Remember what Plato said about you." I work in various fields. As you'll see, I have no real attention span. Of any group I belong to, this is the one that's closest to my heart. I want to stress that.

Father Brungs, of course, has all us rough diamonds. He keeps picking these facets he wants us to polish. He introduced me to the theme Beauty of this Convention about two years ago. I was enthused about it from the beginning, even when he asked me to be on the program. But, I have to say I never think of beauty with my work. I chatted with two of you about this a few minutes ago and staggered them by saying that. I tend to think in terms of communication. If I'm doing a piece of sculpture, I want to get a concept across to the people that are looking at it.

So along comes this topic of beauty and it's like a foreign element to me. I can't ever remember thinking I'm going to do a beautiful work. Even if I'm doing a landscape watercolor, I say: "This is a great moment. I want to share it. I'm going to put it down and share it." But thoughts of beauty are not ever there.

I did think about beauty when I was doing a portrait of Manuela Mateoli who died last year. She was the first Minister General of the secular Franciscans. She was an

elegant, gorgeous woman with very fine bone structure. I decided to do a portrait of her, and had the worst time of my life. I had difficulty eliminating mannequin-look and getting to the real person. This difficulty arose because she really was beautiful — in any terms we know.

I also did Ella Grasso, the late governor of Connecticut. Ella Grasso was more my kind of woman. She wore a Prince Valiant haircut. She looked like Marie Dressler — for those of you who are old enough to remember Dressler. Mrs. Grasso was a good, sturdy, strong woman. Her character shone. She was not beautiful. But I never think about beauty in itself.

If I thought of beauty in science, I'd probably find it in the bending of light in a gravitational field. I think that is wonderful. Or I'd see it in a great theory with an elegant proof. That would be beautiful to me.

I had to think a long time about beauty in technology — the other topic that was dropped on me. I'm at a stage where I'm irritated by technology. But I remember a talk given by Pope Paul VI on St. Joseph's feast day in 1969, I think. He laid into everybody in the audience. He said: "Catholics must become competent in their work. You cannot substitute prayer for competence." He wanted everybody in the working field to try to become the most competent person in that field. I had not heard anything like that before, at least from the clergy. I thought that that was a wonderful focal point. I recall pondering how important it was to realize that prayer is not going to take the place of competence. Prayer very definitely has a spiritual effect, but it's not going to replace what we're capable of doing well. A novena will never do that. We've absolutely got to get down to brass tacks and study and train.

The New York Academy of Sciences about eight years ago had an article in its monthly magazine. It said from 15 to about 45 percent of instrumentation in laboratories was improperly calibrated. Well, everybody has his or her Achilles' heel. Mine is that I'm always scared to death that somebody else's report is going to come down the pike with my name on it. If I go for a biopsy, I say: "Remember, I want the report back on *my* biopsy. That's mine and I want the return information on that."

Fortunately one of the first people I met when I arrived here was Dr. Neyle Sollee. He said: "But, Annetta, I must tell you I worked at Methodist Hospital in Memphis, Tennessee, and they have the most advanced intensive program on keeping all of their laboratory work up to the highest level." So I'm putting him at the top of the list the next time I get a test done.

Many people today are concerned about sloppiness with technology. Of course, when it hits our body, it really hits home. So, I think of technology in this context, asking myself what I want out of it to make it beautiful. The little list I've developed runs like this: integrity, precision, calibration, accuracy, interpretation when it develops and a response. That makes it beautiful to me. I know that is like demanding a technological Toscanini be in charge. Nonetheless, unless we have those components I have an "antsy" feeling about it. I suppose I must also add confidentiality to my list.

I told someone some years ago that I was getting a card for the Library of Congress. He asked why I wanted to that? He said: "That could be dangerous." "Dangerous?" I replied "Yes," he said: "Everybody will know what you're reading. The government would always know. They will be able to trace that." What a horrendous idea. I couldn't believe it. But everyday now more information is bubbling up. My friend, in essence, was talking about confidentiality. I am not sure in my own mind how important that is right now. Definitely we need the Holy Spirit as we seek answers to all these technical advances. We have to weigh the variables and slowly come to some conclusion or other.

*Beautiful!* I would say definitely that the DNA double helix is beautiful. Leonard Buckley's design for the cover of the ITEST book on *The Genome Project* was beautiful. I can say fully that that was a moment of beauty. It's haunting. We can profitably meditate on that picture. I can say most directly that I am comfortable in saying that that cover is beautiful.

I want to speak only a few more minutes on this. Thinking about that book cover and the double helix leads me into thinking about the helix as a ladder. I'm into ladders right now because I'm working on the St. Anthony project. I'm using the sermons of St. Anthony for my material. I'm doing parallel research. One of the things I've come across is from a dictionary of symbols that was written by a Spaniard. He refers to another author on the subject of primitive belief. He observes that in order to reach the mountain of Mars and reap its benefits, one must descend the ladder of one's forbears, suggesting a biological and historical source for the mystic symbol of the ladder.

Steps are one of the most notable symbols in ancestral rights. Schneider wrote this in 1946 in *Mythology and Ancient Culture*, but I thought it was very applicable to what I'm saying here. We're trying to glean our ancestry and what's operative with us and in us at this moment from the double helix.

St. Anthony wrote: "Christ is the ladder." He said that



one side of the ladder was the human and the other was the divine. He went on to say that there were six characteristics of Christ's holiness: humility, poverty, wisdom, compassion, patience and, at the top, obedience. Well, obedience today! I mean that's like swallowing a staircase, isn't it? It's tough, but I thought maybe that's what we need, to re-focus on the things Anthony's speaking about. We're not going to stay within the limits of beauty apart from them. We need to keep exploring what we can and should, but, nonetheless, we must remain within those limits.

I used the double helix in this stained-glass window. I'm doing 49 stained glass windows for a church in Brasilia using St. Anthony's sermons. St. Anthony said: "The tau cross (T) is the symbol of protection and salvation." Within that concept, I wanted to use the double helix to convey to people that even the sciences were under this protection. In the corner of the bottom of that window I have some daisies. Daisies, which grow all over the world, were the medieval symbol for the eye of Christ. So my suggestion is when we work on all these scientific and ethical problems, we keep some daisies close at hand. Hopefully that eye of Christ will look down on us so that we can more rapidly and more fully meet the will of God. Thank you.

**SR. MARY ELLEN MURPHY, RSM** I've been looking forward to coming to this conference and I was asked to lead one of the small groups yesterday. But when I walked in the door, that was changed to being a part of this panel. So I ask you to bear with a presentation which is less well prepared than it might have been. I hope it conveys what I would have said if I had had more time to prepare. I shall speak from my own experience and I will quote heavily from two other scientists.

My life has been full of zigs and zags, but I can truly say that no matter where I have been or what I have been doing, much of that experience and knowledge and learning has been helpful for the next phase. I have served as an industrial chemist in three different laboratories starting, of course, at the low rung in a control laboratory and then moving on to industrial hygiene at a time when very little was being done about such things as asbestos, lead in air, hydrocarbons, freon, and so forth. I then went into basic research with plastics.

Then I entered the Sisters of Mercy. In those days, obedience being what it was, we did what we were told. I was asked to go and get a doctorate. That happened to be perhaps the biggest turn in my life. It was just about the time that President Kennedy said that we want to put a man on the moon in the decade. I am

one of twelve scientists prepared by NASA — two in each scientific field; I was one of the two chemists — to be prepared to study moon rocks and analyze them. I consider that a very definite achievement in terms of the scientific effort with regard to the NASA program. But also I feel it was the greatest peacetime effort ever in the history of civilization, as von Braun said, in terms of moving humanity to a new level.

These life experiences have brought me to a greater appreciation of the physical world. As many of you indicated yesterday, that appreciation immediately brings us to the "nonphysical" world, the mystery, the things we do not yet know. I feel that such appreciation helps our faith. This morning's reading at Mass was about Peter trying to walk on the water. I can honestly report that many times in my research, in the research problems and effort, I felt as if that's exactly what I was doing, what our group was doing. Only with God's help do we ever "stay on the water."

Let me put forth my two other scientists to lend credibility to what I'm saying here. The two are Neils Stensen, a 17th century Danish anatomist. In those days there were no sharp disciplinary lines and he ended up doing a bit of basic geology and crystallography. The second chemist I'll mention is a physical chemist, dead now but very important in this century — Harold Urey. He was Nobel Laureate, very much into basic physical chemistry. Very early on he used his knowledge of thermodynamics to develop theories of the origin of solar system. He was, I feel, the only one of his generation that stayed with the space effort and remained a leader in pursuing the scientific objectives which were eventually accepted for landing on the moon and the exploring the planets.

Let me go back to the Stensen quote I have passed among you. This is his most famous quote, I think. He has other important writings on geology and also anatomy, but I think this quote his best: *"Beautiful are the things seen, more beautiful are the things we understand, and by far the most beautiful are the things we do not know."* Remember, Stensen was an anatomist. Those of you who have had medical studies know that he was the one responsible for finding and describing the Stensen duct. He also studied and theorized about the brain and the muscles. Apparently he took on Descartes before the Academy of Sciences in Paris and disproved his theory on the muscles. So he was a significant person in the history of scientific development.

This statement comes from Stensen's own experience and reflection I believe that any true scientist probably perceives exactly what Stensen is saying here, and that is the beautiful. I think he has expressed precisely what

that is. I further believe that most scientists with whom I've dealt can resonate with this statement.

Let me give you an example of where I felt as if I and moon rocks group were walking on water. As I indicated, I was part of the NASA group being prepared for analysis of the moon rocks. We were searching for life in outer space, at least life beyond the Earth. Until we had moon rocks to work on, the only two bits of data that we had were meteorites and any kind of visible light radiation coming through our atmosphere. That represents a very limited data base.

Maybe 2,000 meteorites fall a year. Some fall in the oceans and we never pick them up. A few have been found in the Antarctic ice. But the fact remains that this is all we have. Most of these meteorites are in museums, and museum curators will hardly let you even handle them.

NASA felt that the best group of scientists to analyze the moon rocks would be the people working on meteorites. My particular work was with the organic chemicals in meteorites. Therefore, we were going to look for those organic chemicals in the moon rocks. We were looking for chemicals that would have come from life or would have supported life. If you've ever had research experience and problems, you know that a major part of the question is what you're using for your criterion, if you're looking for life. That was a part of our situation.

The moon rocks actually came back to Earth. We had them and we could physically analyze them. But during the Viking project to Mars, everything was to be done remotely. There was nothing that we could analyze that way. So here we were trying to design experiments that would send back data to give us some indication whether or not anything was living on Mars. That's a much more difficult question than analyzing the moon rocks.

I realize that part of this section of this present panel is supposed to refer to technology, so let me bring in a speck of technology here. The biology experiment on the Mars Lander, both I and II, was simply a cubic foot of experimental apparatus. In other words, we had to ask ourselves how to design an experiment that will fit in a cubic foot and answer the question whether there is anything living on Mars. That was a major technological problem. I participated in some of those discussions.

In fact, we had a chemistry experiment. There was one chemistry box, one biology box and one box that was designed to collect physical data like cosmic rays,

Doppler effect, and so forth. Our experiment was number two on the chemistry. The number one experiment was the right one to have chosen because the number one chemistry box actually analyzed what came from the biology box.

Let me simply say that this is the way the design went. When I think about it, I conclude that it was probably elegant. It was very much like the kinds of experiments a fifth grader does for a science project, that is they may take tomato plants or pea plants or something like that and give them light, water and nourishment. The fifth grader is quite happy however their experimentation turns out. That kind of apparatus is essentially what flew and landed on Mars and did the experimentation. In other words, take Martian soil into the apparatus, water it and see what happens; give it enough light to mimic photosynthesis. Give it nourishment and see what happens. Some of you, maybe the physical scientists might want to talk later about our results.

To me this was one of the finest examples of technology helping to answer a physical scientist's questions. I think most lay people are interested in the question of life beyond the Earth. Some are concerned from a fearful point of view; others are quite happy to think that the world and life as we know it would exist other places in the universe.

From all the data we have from meteorites, from, now, the Hubble Telescope and other satellites and also Skylab, we've been able to move beyond our own atmosphere. We have much more information about our own Milky Way and the universe. Yet we're still faced with the same basic questions. How did it form? What are the other stars? Are there other planets? And so forth.

Despite the data we now have — we have numbers beyond count — we still do not have a coherent theory of the origin of the solar system. The basic theories we had before our efforts in space are now somewhat in the background. We still have five theories and we're still arguing about which one is most likely. I often tell student groups that we need someone out who isn't so tied up with the old theories. We need fresh thinking to help us sort this data out.

If I had had more warning about giving this presentation, I would have brought some slides which I consider beautiful. One of the first I would have shown you was that collage that has shown up on Christmas cards and notepaper. You can get it from the Smithsonian Air and Space Museum. It depicts Jupiter and the four Galilean moons. I consider that a beautiful representation of what I think is a great achievement of

science and technology. It has given us more physical visual information than we ever had from our best telescopes here on Earth.

The second slide I would have presented to you would have been of the second Galilean moon, Io. If you saw it and if Annetta saw it, I am sure you would think it was a modern painting. The surface of that moon that is closest to Jupiter is still in the molten state and its colors, its beautiful reflective colors are red, yellow and orange. As it went by, Voyager found eight volcanoes erupting. That's not to the credit of scientists or technologists. Before the Voyager flyby, we never asked ourselves whether or not there were any active volcanoes in the solar system. I'm happy to say that it was a woman on the navigation team, going in to the Jet Propulsion Lab on the weekend to get caught up, who brought up the first picture up on her computer screen. She thought it was an artifact. She asked for another picture and studied it. By the time the bosses came in on Monday the team had identified eight active volcanoes on the moon of Jupiter. When Voyager II went by later, only six were still erupting.

But the beauty of that photograph — you've probably seen it — would lead one to say: "We never could have done that." If an artist had done it, we'd say that it is interesting modern art.

I had the same experience looking at geodes. Until the geode was severed, no one saw what was inside. The crystal formation and the colors are magnificent. To look at a thin section of rock under a polarizing microscope is a beautiful thing, particularly if there's quartz in it. Back in the days when I was doing industrial hygiene work, we were always after the amount of quartz present, because it led to silicosis. We used the information that we had at that time in counting asbestos fibers, even though asbestos is not really quartz.

The lunar soil, the loose material on the surface of the moon on which the astronauts were walking, is beautiful under a microscope. With only 100x magnification those lunar pieces look like Grecian faces. They studied its shape, color. It was nearly uniform in texture.

Technology has given us other things like wheat resistant to rust and Maine potatoes which have less dry rot in them. On the horizon we are working toward motors that will be small enough to work within our blood vessels. Also, I have been impressed with the fiber optics and I consider the light that is sparking out of a bundle of fiber optics that we can hold in our hand a marvelous artistic development. It's like a mini art show.

I marvel at the technology involved in medical diagnoses and what it's able to do. Researchers have or are developing materials, metals and synthetics, for artificial hips and knees, heart valves and material that can replace arteries, for example.

But most of you here, both in basic science and in technology, will have reflected on what you're doing. Granted, much of this reflection is intuitive. But I think that our intuition helps civilization advance. I feel that most of us, and them, have moved to the point of where we see technological advance in terms of humanity. But we also move forward, I think, in sensing that the creator is greater than we ever imagined.

For the educators among us, I'd like to read a quote from Neils Stensen. It shows what he tried to do as he talked to his students. I try to do this and I would encourage all of us to do so, because we're all educators in one way or another. Stensen said that he always tried to get his students to go beyond the superficial structure of the body to see the dignity of the soul, and to go from the miracles of the body and the soul to the Creator in order to know Him better and love Him more.

I'd also like to quote Urey. Those of you who might have known Urey in his younger day surely would not have thought of him with as someone I would be quote in terms of any kind of spirituality. But when he was interviewed time after time after the lunar rocks came back, he said: "God is a much greater God than we had ever imagined."

But this does not have only a good side. I remember the group sitting on the shore at La Jolla, California. Before it was turned into a general campus, it was an absolutely idyllic place for academics to be. Anyway, in the early '60s, we were sitting there trying to decide how to go about analyzing moon rocks. We were all working on meteorites. One of the team sitting there was a good Catholic. I remember Urey saying to him: "Gordon, what is your problem that there might be life beyond the Earth?" We all knew that Gordon had this problem. Another member of the team also had the same problem: is there life beyond the Earth? They argued that there probably wasn't life and we should forget about it.

Back in those days I was wearing a habit. I was very obviously connected with the church, although I'm not sure the bishop would have appreciated my working on the question of life beyond the Earth. Our Directress of Education told me not to let the bishop know what I was doing. I was prepared, if I ever met him, to talk about my work in chemical terms. Urey said to Gordon:

"What is your problem, Gordon? Sister Mary Ellen doesn't have a problem." He meant that I was representing the Church at that time.

As I reflected on that and talked to Gordon afterwards, I felt that what was happening at La Jolla was probably similar to what was happening when Galileo said that the sun is more important than the Earth because the Earth is simply moving around it. That wasn't the issue, however. The issue was and is who are we as humans. What happened in the 17th century was the impression that we were a little less significant if the sun was more important. I feel that all of us who work in science are usually brought to that point of where we see that our place, no matter what we're doing, has a perspective. We're always brought, I think, to the point of where we recognize that the Creator is totally beyond us.

I'd like to thank you. Also, I'd invite all of you to experience some of the joy of the physical sciences and look at the polished marble that is serving as the tabernacle stand in the chapel here at Mont Marie. It is a beautiful example of the magnificence of creation. To see the coral in it is to realize that that was life in large enough pieces to be recognizable. I'd love to be able to have someone saw through it because I think that we might find a nautilus embedded in it. Thank you.

**DR. THOMAS SHEAHEN** I think it was about four months ago that Father Bob said to me, "Tom, we'd like you to talk about beauty in government." I said, "Okay, sure." And in the intervening months I thought about it and I said, "Beauty in government? Come on. Where can you find beauty in government, the Clintons, Slick Willie, Lady Macbeth? Come on. Beauty in government, no way." So I thought about it a little more and by taking perhaps a bit of an historical view and so forth, I think I can find some beauty in government. And that's what I want to try to talk about today.

When citizens act together to accomplish something, that's beauty in government. That's what government is supposed to be all about. The Declaration of Independence talks about the consent of the governed is where the legitimacy of government comes from. The real beauty in government is that citizen action taking place.

You can think of a whole bunch of things where citizens come together and act together. Some of those aren't really all that good. If a whole bunch of citizens in one congressional district rally around and get some pork barrel project in, you can say, "Hey, great, unity," and all that. But that isn't really the kind that gives beauty because the achievement of bringing the pork

back home is really at the expense of someone else. For there to be real beauty in citizen action in government, there has to be some kind of beauty in the goal itself, something that is truly beneficial without harming other people. That's not so easy to find in government.

You know the old slogan about — was it Bismarck who said, "You must never watch how laws and sausages are made," because it's not a very pretty process.

Tuesday — and Peter just reminded us of this a couple minutes ago — it was Virginia Kampwerth who asked, "What is the most beautiful thing you've ever seen?" I've been thinking about that. I'm scanning the background in history and I can't really come to a conclusion of the most beautiful thing I've ever seen, but I know the most beautiful thing I've seen this week. That's those children outside playing on the equipment right out in the courtyard.

Why are children so beautiful? They're innocent, they're no threat, they're harmless, they're happy. What was our definition of beauty a couple days ago? That instant aesthetic response that brings joy and happiness. This is what we get when we see children playing. This makes us happy. We respond to it. This is beauty.

Now, if we can identify with this sort of beauty, and children are such beautiful things, then what's the opposite? What's the ugliest, the most nonbeautiful thing? What's really awful? It has to be the destruction of innocent and defenseless human life.

We all instantly revile from that famous picture known as freedom of choice. The gut wrenching feeling of horror that we get to see a destroyed human being is really the opposite of beauty. It's the ultimate in degradation and disgust. When our citizens come together to fight against this evil, that's beauty in government. That's citizens doing something to make their whole society better. This is the best example I know of the unity among citizens that can bring beauty to our whole society.

In theological circles we sometimes talk about proportionate response. I've heard this term a lot of times in dabbling around the periphery of theological circles. What's a good proportionate response to an evil that the government is doing?

In the case of slavery it took warfare and bloodshed to rid our country of it, and really the deprivations and misery of the blacks didn't go away just from that. It took the greatest war in history to defeat Hitler. The fact of the matter is that normally when there's a great evil in government, warfare is the reasonable and

normal thing that usually happens. I don't think I meant the word reasonable, but it certainly is customary.

I don't have time to go into all the details, but you can make a real solid case that a proper proportionate response to the evil of abortion is nuclear war, complete and total obliteration of the offending society. Let's think about that for a minute and ask how such a thing could happen.

Well, we know the Islamic fundamentalists definitely forbid abortion. Separately they also really hate us. America is the great satan. The whole western culture they really hate. They'd like to get us.

Now let's look at the realities of the breakup of the Soviet empire. Some of those outlying countries, for example, Kazakhstan, kind of an Islamic country, are sitting there with nuclear weapons and very little government. If they decide to raise money by auctioning off their nuclear weapons, who's going to be at the top of the bidders list? Iraq, Iran, countries like that. They will turn and use them against us without mercy. Among people who think carefully on foreign affairs in Washington today, the danger of nuclear war is today much greater than it was when it was the United States and the Soviet Union poised with missiles pointed at each other. At least you had rational people controlling them. Now we're at real danger in this world of a major terrorist attack involving nuclear war from some of these Arab countries.

Think about it. If that happened, these are the people who will go to war, among other things, to end abortion. And you, dear pro-lifer, are going to be on the wrong side. Is there any other way? Well, with God's help there is I believe.

We have seen now three times in this century when nonviolent resistance has been able to overthrow a major government injustice. The names we associate with this are Gandhi, Martin Luther King, Lech Walesa. By getting the citizens to act together and tell the government what you're doing is wrong, they brought about change nonviolently. The most recent of these examples is certainly the one closest to our heart and closest to our memory, too.

Lech Walesa and the Polish people have had a centuries' old tradition of standing firm in their faith, the Catholic faith, against all manner of oppression. What the communist found in over half a century there was that they could not take away the religious faith of the Polish people. There was nothing they could do. And it's interesting to note that for four or five centuries before that, diverse kings and other dictators also

weren't able to take it away from the Polish people. Whether from the streets or from jail, what Lech Walesa's basic statement was to the government, "What you're doing is wrong." And that nonviolent resistance, that solidarity of the entire Polish people was what brought down the communist empire. It wasn't the missiles in Wyoming, Nebraska, Kansas, or whatever. It wasn't the SAC flying over the North Pole every day ready to attack. Communism fell apart from the inside because they could not take away the dignity, the honor, and the religion of the Polish people. That nonviolent resistance, that solidarity is the incredible triumph that vastly exceeds anything we could imagine through warfare. We all have known that if there had been a World War III of the America versus Russia type, there would have been no winners.

The weapons and the tanks of the communists worked for only a very short time. Was it 1954 or '55, something that like? Pretty soon the communists found themselves right back in the same place they were before. They had a people there that would not give in to them. When Walesa led the labor strikes in about 1980, he had the entire citizenry behind him. The communists just couldn't overcome them. That was beauty in government, that citizen action doing something.

In America today we've got a very similar situation — well, not entirely similar. In the 1960s when Martin Luther King led the civil rights marches, he had the benefit of a favorable press and media. Today people like Operation Rescue and other nonviolent protesters are faced with a media that distorts and misrepresents things in the most appalling way.

The struggle to oppose abortion by silent, nonviolent protest is going on but it's hidden behind a smoke screen of disinformation promulgated by a media that wants to preserve a culture of hedonism and prevent any sense of Christian morality from returning to America. But it's going on. It's small and flickering today. You don't see it very often and you don't see it very clearly, but it's there. Little by little individual citizens are becoming active and are stepping up and saying to the government, "What you're doing is wrong."

People are turning out to be present at the killing sites, to just be there — sidewalk counselors, rosary prayer groups, picketers, rescuers, whatever. It crosses all church boundaries. It crosses all economic levels. It crosses generations. It's the citizens of this nation coming together in the same spirit of personal sacrifice and unity that Gandhi's people had, that Martin Luther King's people had, that Lech Walesa's had.

Is this going to succeed? We don't know, do we. We don't know how it's going to come out. We hear about Gandhi, King, and Walesa because they're the ones who succeeded. We don't hear about the ones who failed. What it's going to take is for everyone of us who think abortion is wrong to get out there publicly and say so. It means standing up, to become active, to be there when they're killing babies.

Remember, your standing as a silent witness and mourner is the only funeral these children are ever going to get. There's a lot of abortions clinics out there and it's going to take a lot of people. But that's how citizen action works, and that's America at its best. That is beauty in government.

**DR. ROBERT WHITE** I think I've been coming — probably the only truthful thing that's going to be said within this framework of my presentation — for, I think, some 20 odd years. And I would like to compliment for all of us again ITEST on its 25th anniversary and above all Father Brungs who I think, I must confess to you, hopefully, has had an affect on my personal and professional life.

I have a bit of an educational background. I'm one of those unfortunate people that did graduate from Harvard Medical School, a rare minority. I have a Ph.D. from a more respectable institution, the University of Minnesota, in neuroscience. Unfortunately, my medical education was at the Mayo Clinic and Harvard and for the last 30 or 35 years I've taught and practiced in Cleveland at the Case Western Reserve Medical School.

I don't want to continue Tom's negative report to you because in the framework of the profession, the medical profession, you would probably believe that this is an ideal place for a display of the faith and it should be interwoven and integrated into medical practice and the broad area of health care delivery. Frankly, you see very little evidence of anything that could pass as Catholic in health care delivery. As a matter of fact, one of the most distinguished neurologists in the United States wrote an article published in a Catholic diocese newspaper which raised the question, is there any place any longer for Catholic health care ministry. And if nothing worse, shouldn't it be folded into what goes for a Christian health care delivery system.

One could raise the issue, do we really need and can we afford Catholic medical schools. Is there a reason to perpetuate in a sense the beliefs that are central to our faith into the education of a young woman/man who is to become a doctor? Well, many of you can probably set forth reasons why that is appropriate and should

continue. But in the realities of medical education and certainly from the standpoint of an outstanding secular, private, nonreligious medical school, one's attempt to locate, isolate, demonstrate Judeo-Christian teaching is a difficult matter.

A little earlier one of the speakers spoke about bioethics. Most of us would presume that this would be a convergent point for faith and science within medicine. Well, I would remind you that bioethics is becoming an industry. You can take whether you have a nursing or a medical background, whether you have a theological clerical background, you can take yourself to a number of universities and get graduate degrees up through Ph.D. in bioethics. You've had no background in medicine and no background in theology. And many of you might disagree with me that regardless of one's background, if you do present yourself as a bioethicist, you should in some way bring the faith, whatever that faith is, to the equation of patient care. In reality, these people are not available to me at 2:00 in the morning when I'm operating on somebody's brain. They are available to me at 8:00 or 9:00 in the morning with a coffee cup at a table to either agree or disagree with the ministrations of myself and my staff in the area of brain injury or brain disease.

I cannot really stand here and argue that this particular new area of science, bioethics, has had any contribution, certainly from a faith standpoint, on the practice of medicine, certainly not at my university although we have an institute of bioethics at Case Western Reserve, as do certain other medical schools. But I must confess that its impact on the practice of medicine is in essence almost impossible to find.

It's been interesting to me also that studies have been done out at Notre Dame in attempting to locate those of us who have had a Catholic undergraduate education in suburbia. The truth of the matter is that you cannot find the Catholic college graduate in suburbia in a sense be he or she different from those educated at the private or public colleges. We are not more charitable. We are not more giving. We are simply not more moral. These are sociological studies out of the University of Notre Dame. But I would say whether they are true or false, probably for good reason you do not find a distinction within the practice of medicine.

The advantage here is that the Jewish and/or Protestant and/or atheist and/or Catholic physician simply in so many ways in my judgment practices a good form of humanitarian health care. In other words, if there is in my judgment a profession which still maintains the semblances at least of humanism, it actually is the physician regardless of what school or what background

he or she came from. But you're not going to find that defined in terms of Catholic principles in any way, shape, or form. And if Dr. Foley, this distinguished neurologist, is correct about no longer maintaining the myth of Catholic health care ministry, then the issue here is whether one continues the myth of Catholic medical education.

Look at the issues. Tom has just mentioned the problem of abortion. Abortion isn't an issue within the medical schools any more. It's an accepted given. And within the profession we speak of it as a woman's right and this is something between her physician and herself. One question whether even the husband under these circumstances has a place.

Please remember that I've spent considerable time, and some of you may have read one of my unfortunate articles in America dealing with fetal brain tissue transplantation. This is really not an issue within medicine. The use of fetal tissues, regardless of how they've come about, and now you're going to see within the framework of the planned abortion an entire new industry develop in order to use those tissues. Here you have the removal of tissue from a fetal brain which must be alive — you can't transplant dead tissue — which is now stereotaxically placed into the brain of an adult patient with something like Parkinsonism.

I am not an OB/GYN person nor a counselor, but I cannot believe that a poor young woman who is on the verge of trying to decide whether to have an abortion or not is not going to be approached with the idea, "Listen, dear, don't worry about those products because they're going to save somebody's life." Now it's insistent in federal law and so forth that that's not to take place, but I can't conceive that within the framework of counseling something of that order won't be there.

Please remember, what are you and I going to do if we go to a pathology laboratory and there are the products of an abortion and somebody says, "Well, do you want those thrown into a garbage can or do you want us to start taking tissues and basically use them for tissue lines and so forth?" It's a very difficult problem.

Just very quickly, there's an entire sort of laundry list, if you like, of problems within the profession where faith should play an important part. What about physician assisted suicide? Remember, hundreds of thousands of us Americans have voted for that in California and in Washington, but there were not enough. So far those particular state statutes were defeated. How about the problem of anencephalia? What are you going to do with these children that are born with little or no brain? Basically the issue here is we don't have a definition of

death and, therefore, using their organs for transplantation. But those are interesting sort of subjects and they often pose interesting problems for bioethical discussions. But let's really get to the meat of it.

We're going to have some dramatic changes made in our health care delivery system. We're going to have some form of universal health which I think most of us would agree is appropriate. I don't think universal health is going to cover all of the liver and kidney and heart transplants that you may want, but it will be available in terms of straight out medical care, hopefully prenatal care, and so forth, some of these very broad issues that are terribly important within the framework of medical care. But the issue is you're going to have to ration somewhere along the line. You're going to have to use, as Callahan has pointed out, something along the line of age -- that after a certain age you're not going to be able to have a heart transplant or even a coronary bypass.

Let me tell you, faith or no faith, it's us, we Americans, that drive the health care system. We want the very best for ourselves and our relatives, and that's what really makes it expensive. Are you going to tell me that if that unhelmeted motorcyclist is flown into my level I trauma center and he has no insurance, his family has no insurance and we have limited resources that I'm not going to start to work on that young man? He's already had a \$2,000 airplane ride to get to my institution. No, no, no. You're going to have to ration. You're going to have to select. And therein plays, I think, the real morality play, if you like, in terms of health care and medicine today. You're going to have to make certain reservations in this particular area.

So let me leave this field of faith and medicine and confess to you that, granted, I practice within an academic private or public arena. We are not blessed, we are not blessed by the invasion of Catholicism into our medical practice. But on the other hand as I conclude I will tell you that as a practicing physician, yes, as a specialist, a specialist that deals with brain surgery mostly, that I think that my Catholic education and upbringing and my constant association with the church and the clergy and the Dr. Father Brungs of the world have in a sense given me individually a dimensional approach to my practice within the framework of my Catholic practice, if you like, I think is the very best of both worlds.

## REVIEW OF *ORIGIN OF THE HUMAN SPECIES*

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*Origin of the Human Species*. By Dennis Bonnette. Amsterdam: Editions Rodopi, 2001. xv + 202 pp. \$38.00.

Last year PBS aired a mini-series titled *Evolution*. The first two-hour segment, "Darwin's Dangerous Idea," provides a sympathetic portrayal of the life and thought of Charles Darwin, who is often regarded (incorrectly) as the father of evolutionary theory, while the seventh and final segment, "What About God?" explores the apparent conflict between evolutionary science and the biblical doctrine of creation as understood by religious fundamentalists. *Evolution* was initially aired almost five years after Pope John Paul II's 1996 address to the Pontifical Academy of Sciences on the question of evolution. Not a few viewed this pontifical address as a belated but inevitable recognition of the validity of Darwin's theory.

Neither *Evolution* nor the preceding interpretation of the 1996 address would lead one to suspect that the question of human evolution is substantially more complicated than it appears to biblical fundamentalists or to the champions of philosophical naturalism. A careful reading of the Pope's 1996 address reveals, among other things, that the Catholic Church's magisterium does not endorse *Darwinian* evolutionary theory. Avoiding the rather common mistake of equating evolutionary theory with Darwinism broadly construed (e.g., *Evolution*), the Pope distinguishes between various theories of evolution and unequivocally rejects evolutionary theories based on philosophical materialism.

Given the availability of a veritable host of books and articles devoted to the history and ideas of Darwin and his followers, selecting a few essential texts in this growing field of inquiry is not a simple task. Those seeking a popular but judicious assessment of Darwin's theory of evolution can hardly do better than to obtain George Sim Johnston's *Did Darwin Get It Right?* Those interested in a more advanced philosophical treatment of evolutionary theory, especially as it touches on theological matters, will be delighted by Professor Dennis Bonnette's *Origin of the Human Species*.

Employing the tools of logic, epistemology and metaphysics, Bonnette provides a systematic analysis of the delicate problem of inter-specific evolution, especially with respect to the advent of rational animals-mankind. In addition to a balanced critical summary of the debate between Darwinian evolutionists and scientific creationists, his analysis includes an illuminating examination of the different ways the term "species" is employed in scientific and philosophical discourse. One of the key strengths of this historically

sensitive study is that it preserves the critical line of demarcation between empirical science and metaphysics, a line neglected too often by Darwinists and their creationist opponents. Lacking an adequate grasp of the important distinction between material being and being *per se*, Darwinists (e.g., Richard Dawkins) are prone to subordinate metaphysics to experimental science, to transform modern science into a metaphysical research programme as they strive to eliminate any reference to divine causality from every rational explanation of cosmic phenomena. A related temptation afflicts various creationists who strive to demonstrate the existence of an intelligent cosmic artificer on the sole basis of natural science by extending science's proper methodological boundaries. What both of the foregoing camps have in common is a misguided tendency to render to natural science more credit than it can properly claim. In such cases God is reduced, at best, to an extremely powerful but finite secondary cause. Bonnette's approach, in contrast, steers clear of such deformed conceptions of the uncaused first cause.

Without detracting from the rational weight and authority of divine revelation, Bonnette's interdisciplinary study affirms the invaluable contribution of experimental science in man's quest for knowledge. Bonnette's deep respect for the distinct methods and principles of experimental science and revealed theology enables him to reach some fascinating speculative conclusions, conclusions that challenge the convictions of those committed to simplistic biblical exegesis or to the narrow purview of scientism. For instance, one could point to his probing discussion of Adam and Eve's origin and the question of monogenism vs. polygenism. There Bonnette defends the position that coherent evolutionary theory need not contradict a monogenetic conception of human origins if the deliverances of legitimate science and divine revelation are not misconstrued. And the nuanced reconciliation advanced by Bonnette, which avoids the anti-realist drawbacks of Stephen J. Gould's proposed NOMA (non-overlapping magisteria) principle, does not violate the autonomy of either natural science or revealed theology. Bonnette's study lends credible support to the claim that modern science poses no genuine threat to religious orthodoxy and that such orthodoxy promotes rather than inhibits rigorous and fruitful scientific exploration. In sum, it would be no exaggeration to claim that *Origin of the Human Species* is an extraordinarily erudite addition to the scholarly literature on evolutionary theory vis-a-vis the mystery of human existence.



## AN APOSTLE FOR THE IMMIGRANTS

### The exile years of Father Felix Varela y Morales (1823-1853)

By Juan M. Navia

Factor Press, Salisbury, MD, 21803, USA 2002

This book, written by Dr. Juan M. Navia, PhD and lay theologian, is a most welcome effort to portray the deeply meaningful and holy life of a Cuban priest, Fr. Felix Varela, (1788-1853) emphasizing, as the subtitle reads, his 30 years of pastoral care of an immigrant community (mostly Irish, Italian, Germans, Poles, etc) in New York, in those difficult years of anti-Catholic harassments, economic poverty and social discrimination in the USA.

The central chapter addressing this theme is Chapter 4 of the book, that covers 33 pages and is entitled *Father Varela and the Irish Immigration in New York: Pastoral Work*. The rest of the chapters are dedicated to establishing the necessary historical "scenario", (Chap.2), to dig into Father Varela's pre-exile and formative years (Chap.3) and into the various aspects of this remarkably polyfaceted priest, namely, his apologetical talents for defending the Catholic faith (Chap.5); his activities as educator, writer and social liberator, (Chap.6) his talents, (even played the violin), personal character and the growth of his inner spirituality throughout his life stages. But again concentrating on the exile years, which the author considers as the "crucible" for Fr. Varela's life, (Chap.7). Varela was undoubtedly the "son of many struggles" and in all instances he lived to the best of his Christian, priestly and human essence.

A short first chapter, plus the Preface written by Beatriz Varela PhD (no relation to Fr. Varela), give a glimpse of Varela's life from which I quote a paragraph on page 4:

Father Varela understood the value and primacy of human dignity and fought to achieve this God-given right that exists for all people, beginning with his Cuban brothers and sisters and including African slaves, Irish and Italian immigrants, and Catholics and Protestants everywhere. This central thought, tempered by his charity and compassion, enabled him to oppose a weak king, [Ferdinand VII], but not to hate him, to debate Protestants and yet respect them, and to work tirelessly all his life to find truth and seek freedom from all political systems and individuals that deprive humans of their dignity, whether it was a despotic government, poverty that deprives people of an education, a ruthless economic law that enslaved men and kept them in bondage or alcohol dependency that destroyed individuals and

their families"

The latter detail refers to the fact (pg. 91) that Father Varela founded the *New York Temperance Society* in 1840, which functioned in the parish where he was pastor, the Church of the Transfiguration on Chamber Street, a church he helped to purchase with his private funds. Alcoholism was becoming a threat among poor immigrants and Fr. Varela had the good judgement of imposing total abstinence only for the addicted cases, but he admitted anyone in the society, not just "daily drunkards" making a pledge of temperance, not total abstinence.

This moderate, rational and practical attitude of Fr. Varela is mentioned over and over in Navia's book as an attractive trait of the humble, kind, respectful, compassionate and loving priest. Yet, when the circumstances demanded, as in his apologetic engagements, Fr. Varela had a mind of steel and a fiery word to defend the truth and moral virtue anywhere.

In this respect Navia does not spare pages (108-114) to describe the debates between Fr. Varela and several Protestants, specially Rev. Brownlee, (Dutch Church). At the end Brownlee recognizes the correctness of Varela's position but clarifies that it is not the Catholic Church's position. Varela, of course, needed not to respond to that clear evasion.

But these are details. The core of the book is dedicated to point out how Fr. Varela, in a holy and heroic way, handled the different issues and struggles of his times, both in colonial Cuba, (Ch.2) as in the turbulent Spanish Cortes of Ferdinand VII, (1821-1823) as in the religiously divided USA, still in its initial Republican years.

One after another these issues and struggles are recounted throughout the pages, either before the time of Varela or superseding his dates, a fact that makes the book very appealing and instructive to anyone willing to refresh, or learn for the first time, the human, religious and cultural drama of which American, Cuban and even Church histories have been made. Since this is an "issue-and-virtue" oriented book the historical order is not strictly followed, a fact that, to this reviewer, makes reading a little difficult. But as a remedy there is an abundantly annotated chronology at the end (30 pages) where new details can be learned and the known ones can be set in proper order.

A topic that in my opinion the author treats somehow lightly is Fr. Varela's alleged "rejection" of Scholastic philosophy and methods of teaching, (pps. 39, 53, 135). This has become a "cliche" among Cuban historians, specially liberalistic and anti-clerical ones (not the case of Navia). But a deeper study of Varela's innovative and "eclectic" philosophy shows that he never rejected St. Thomas Aquinas. In fact, he earnestly recommended his students "not to ever abandon the Summa, where precious diamonds are found." He justly rejected the decadent Spanish version of scholasticism prevalent in 19th century colonial Cuba. Varela was a "liberal Catholic," open to modern science (he founded experimental physics in Cuba) but in no way departed from Church doctrine and his Bishop's authority. As Navia writes, quoting Casal on pg. 174. "Varela laced together the new science with the Christian religion in such a natural and logical manner that no one can doubt one without doubting the other..."

Returning to the title of the book, to end this review, we must note that although only 33 pages, out of 253, are dedicated to it, however, because of the non-historical order, the topic of compassion and help for the poor, the destitute, the immigrants, the rejected, the enslaved, transpires throughout the whole book. Dr. Navia has achieved, in my opinion, a way to counteract, precisely, those "liberalistic" and "laicist" biographies of Fr. Varela, where only the patriotic, civic, pedagogic and philosophic aspects are mentioned, to the detriment of his priestly vocation which he superbly manifested during his exiled years.

If I dared to summarize Fr. Varela's talents and virtues

I would select, from pages 4 and 170: 1) his unshakable Christian faith and love for his Church, "which sustained his priestly vocation and motivated his educational work"; 2) "the love for his motherland", Cuba, which he considered a virtue (patriotism); 3) his passionate and untiring search for truth be it either in books or in Nature; 4) "his conviction about the God-given dignity [equally] to all human beings; 5) likewise "the right to be free and the duty to think and act rationally." The last inclusion by Navia of the word "duty" is very important. Nowadays when everybody defends human rights few speak about "duties." Fr. Varela emphasized both: the rights and duties, the latter being part of that moral virtue which, together with religion, he considered the "supreme pillars of human happiness". This moral content of Fr. Varela's teaching can be richly documented with his *Cartas a Elpidio* (Letters to Elpidio, a fictitious name probably) which Navia describes in detail on pages 147 to 159. This is the moral "testament" of Fr. Varela, so to speak, where he attacks Irreligiosity, Superstition and Fanaticism as the three "monsters" that can destroy society. To end the book Dr. Navia quotes on page 238, Pope John Paul II when he visited Cuba in 1998 and who, in turn, quoted Fr. Varela from the last letter to Elpidio, Vol. I, saying: "Tell them, Elpidio, that they [the youngsters] are the sweet hope of the fatherland and that there is no fatherland without virtue, nor virtue with impiety." So is the end of this enlightening book about an "enlightened" and holy Catholic priest.

*[Book review, by Francisco J. Muller. Both Messrs. Navia and Muller are members of ITEEST. Francisco Muller is Director of the Varela Academy of Science, Philosophy and Faith, in Miami, Florida.]*

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## IN MEMORIAM

Michael G. Murphy, MD

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