



Institute For Theological Encounter With Science and Technology

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Summer 2013 Bulletin

“...O Beauty Ever Ancient, Ever New”

Our director “yields the podium” to me for this issue on Beauty, not because of my beauty but because Fr. Brungs and I organized the meeting on Beauty 20 years ago. The theme of the ITEST 1993 Silver Jubilee Convention in Holyoke Massachusetts was, *Beauty in Faith, Science, and Technology*. This year ITEST celebrates its 45th anniversary.

In this issue we have chosen to reprint portions of some of the essays delivered at that August gathering. They provide a review for long-time members and an introduction to this topic for newer members. Fr. Brungs, reflecting on the meaning of beauty in his foreword to the book, wonders if beauty is tightly related to love. If so, is that love Communitarian, echoing the mystery of the Three-in-One, or is it Individual? Does beauty require familiarity and intimacy? These and other questions he ponders in the Foreword.

Dr. Neyle Sollee, a physician and pathologist, describes his awe at the micro world and “...the terrible beauty to malignant cells” viewed under a microscope; also the telescope, through the macro world, displays a “terrible beauty,” that of the cosmos, another love of his. Sollee goes on to discuss how he sees beauty on three interconnected levels: physical beauty, intelligible beauty and spiritual or moral beauty of the person describing his journeys through God’s creation both on the micro and macro level.

Fr. Bert Akers, SJ, reflects philosophically on beauty and communications, not in the dry academic way one might expect (if wrongly) from a philosopher, but in an imaginative creative “look” at beauty. His title, “*Lookin’ Real Good: Reflections on Beauty and the Transcendentals*,” invites us to get ready to dig into a philosophical feast we have never tasted before. Placed before us on that table are the three transcendentals: “*Unum, Verum, Bonum* and the “Other Transcendental”: *Pulchrum*. But what is this thing called beauty? Is it a kind of “leftover” from the main course of the One, the True and the Good? Hardly! Why is it called “the Other?” Difficult to define! Yet, Thomas Aquinas, philosopher and poet “who grappled with the mystery” describes beauty as “*id quod visum placet*”, — that which pleases merely by being seen. More of this “feast” can be enjoyed in this issue of the bulletin.

Fr. Donald J. Keefe, SJ, our “wisdom” figure, reminds us that the “last repository of the beauty, whether ethical, physical or professional in whatever profession we have in view, is liturgical.” Keefe continues, “...[E]verything we have to say here in terms of beauty has, as its bottom line, a need to return to that sustenance of the Christian vision which is always Eucharistic.”

Finally, in this issue we include an essay by Charles J. Chaput, Archbishop of Philadelphia, who reflecting on the quote of St. Augustine, “O Beauty ever Ancient, ever New...” urges us to “...turn our hearts again to the God of beauty . . . who created us, who sings his longing for us in the grandeur of the world he made, and who renews our souls.” Enjoy!

Associate Director: ITEST

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Announcements

Workshop presentation

The ITEST staff will present a workshop featuring our Pre-K—8 faith/science integrated program, Exploring the World, Discovering God, (EWDG), at the Archdiocesan Religious Education Institute in St. Louis, Missouri, on August 12th

The theme of the Institute, *Open the Door of Faith*, aims to further strengthen and develop ways to deepen a personal relationship with Jesus Christ, as teachers, administrators, pastors and others continue to promote the New Evangelization throughout the Archdiocese in the Catholic schools and parish programs during this Year of Faith.

This year the keynote speaker, Fr. Robert Spitzer, SJ, PhD, physicist noted lecturer, author and video producer, will address topics related to faith and science. ITEST members who would like to hear the two talks delivered by Fr. Spitzer should contact the ITEST office for information on registration. “In his keynote address Spitzer will address three misimpressions: 1) Faith and science are in conflict with one another; science is truth; therefore faith must be a fantasy. 2) If God were all powerful and all loving, he could and would prevent suffering; therefore either God is not all loving or he does not exist. And 3) There is no evidence that Jesus walked and talked on this earth, and therefore, Christianity is just a folk religion for wishful thinkers.”(cited with permission from the Archdiocese of St. Louis)



EWDG progress report

Since our last report on the progress of EWDG’s three-prong marketing strategy, we have visited 22 additional schools in the Archdiocese of St Louis, bringing the total

to 55 schools who now possess more detailed information about the program and exposure to our side by side faith/science lessons. Another aspect of our three-prong marketing strategy is to e-market to all the dioceses in the United States. Thus far we have contacted over one third of the (250 +) dioceses with information on EWDG and an invitation to explore the lessons further free of charge on the web site at www.creationlens.org Our stats show an increase in the number of downloads monthly with an expected heavier concentration occurring during the school year. Since we “went live” on the web site in late December, 2008, we have logged over 1/3 million actual downloads of lessons. We are still seeking feedback from teachers and administrators and to that end our third phase of the three prong approach is close to fulfillment: Four schools were invited to further test selected faith/science modules (Pre-K-8) during the second semester of the 2012-2013 school year. We are compiling the detailed evaluations and comments from the teachers and will report more fully on that facet of the program in the fall issue of the bulletin. We encourage all ITEST members to review the lessons on the web site and send us your feedback.

Those who are not involved directly in elementary education certainly see the importance of establishing a sound pedagogical system in faith/religion and science from the earliest years of development. Our late director, Fr. Brungs, often said that we could learn from the environmental movement whose initiators started raising the consciousness of young people on “saving” the environment starting in the pre-school years. If we could imbue our young children for learning the truths of faith and science with as much passion as the environmentalists have done, then we would have articulate young adults who could “hold their own” in discussions and debates occurring in the public square.



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The following four articles are from the ITEST book of edited proceedings,
Beauty in Faith, Science, and Technology.

The presentations were given at the ITEST Silver Jubilee Convention, 1993, Mont Marie, Holyoke, MA

Foreword

by Fr. Robert Brungs, SJ

Beauty in Faith, Science and Technology

“Beauty is in the eye of the beholder.” How many times have we heard that? It’s even true—to some extent. At one time the United States Supreme Court more or less agreed with the Justice who remarked that we know obscenity when we see (or hear) it. The same may be true of beauty—we recognize it when we meet it. But do we? Is beauty also in the thing (or person or event) beheld? Does it have to be in both? Is beauty itself relational? Even more basically, does beauty exist? Or do only beautiful things exist? If so, what are they? Clearly, beauty is a problem; at least for me it is.

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”. John Cross, one of the panelists, remarks in his presentation that a child is cute rather than beautiful. Has the child experienced enough (suffered enough) to be really beautiful?

*I think that love is built on beauty,
perceived or real.*

Another cliché about beauty: the “artist,” the creator of beauty, must suffer. On the one hand, it is said that without suffering, the artist, and hence the product, is superficial. Must? Can? Does? What part does pain play in beauty? On the other hand, is pleasure needed to appreciate beauty, even create it?

Can beauty be repulsive or must it be attractive? Is imperfection necessary (at least in this fallen world) for beauty? I’m often reminded that a sunset combined with very clean, clear, dry air is rather non-spectacular. What role does “impurity” play in beauty?

Is beauty tightly related to love? I suspect so. I think that love is built on beauty, perceived or real. But is love possible without community? If not, what is the relation of beauty to community? Can a “thing in itself” be beautiful?

Is it even a meaningful question?

[...] Beauty seems to have been a problem for Christians over the centuries. That is true, not in the sense of denying beauty, but in the sense of trying to cope with its paradoxical nature. In humans, it seems the body is essential for the experience of beauty in ways that are not so apparent for truth and goodness. Beauty demands an awareness of pleasure—bodily pleasure. Bodily pleasure has not always been a favorite category of theological writers or Christian thinkers. This, I believe, is especially true of ascetics and of the more philosophically inclined thinkers. I do not believe it is a secret that too much of Christian thought has been too general, too abstract and therefore, in my mind, too non-Christian.

That’s one paradox. Another seems to be the paradox between awe and familiarity. To say that God is beautiful—in fact is Beauty—is an important concept, but not one that moves me very much. Am I simply projecting my own prejudices and biases? God is awesome

indeed, but not familiar to me. I have neither seen nor heard God or, if I have, I have not recognized Him in the sight or the sound. I have not seen Christ either, but, even though He is God, He is far more familiar to me than “God.” The awesome God, like the God of Isaiah’s vision in the Temple, is an indispensable part of the Revelation. Still, the awesome God is alien to me. I readily concede that this may be a flaw in me. Jesus Christ, the Son of God (true god) and son of Mary (true man is more familiar, more intimate and therefore far more compelling.

So, does that mean that intimacy is part of beauty? I suspect so. The alien may be awesome, but awe by itself does not evoke in me a passion to be a part of it, or even to be related to it. The same is true of the all-powerful, the all-knowing and so on. In short, I am not moved to

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bow my knee, to give my love and my life, to the “God of the philosophers and theologians, to the God of human thought, the God discovered by reason. I shall, and do, bend my knee to the “weak God” born in a stable and killed on a cross. I am familiar with weakness, with pain, with failure. I can see such a God’s beauty because I can relate to the things I see such a God doing and being. I would suggest that familiarity and even intimacy is a necessary, essential, aspect of beauty.

Does beauty demand some kind of “community”? The god of Christians is “communitarian.” We do not worship a unitarian God—the one God of natural reason. Without being able to explain the mystery—what good is an explainable mystery? —we worship and love a Trinitarian, a “communitarian,” God. [...] We cannot love except in community. We cannot experience beauty without being in some kind of a community with the beautiful “thing.” We can experience beauty only in some kind of a community with an existent, with some “thing”

or some “one” who actually is. That’s why the composer could write that “falling in love with love is falling for make-believe.” Only that which is can be beautiful. The fanciful may be attractive; it may be pretty; it may be seductive. I do not believe that it can be beautiful.

[...]Like beauty, ITEST not only exists in the eye of its beholders. It lives in each of its members. Their minds and hearts are awesome — but familiar. The “community” is real—and beautiful. I experienced (during this convention) an increased commitment to work with all of you to make this community (and the more important community of the church) more beautiful in our own eyes—and in the eyes of our beautiful God.

I have the rest of my life on earth to contemplate the beauty of the creation, of its creator and redeemer.

(Fr. Brungs died and rose to new life on May 8, 2006)

Beauty In Faith, Science, Technology

by Neyle Sollee, MD

When Father Brungs asked me about nine months ago to speak on beauty in medicine, initially I was hesitant because in all honesty, beauty had never consciously entered into any thoughts I had in the work I was doing. But I began reflecting on my activity. I’d like to share my thoughts and experiences on what I have found beautiful or aesthetically pleasing in my work and in my life.

In 1962 I began to look through microscopes and telescopes. I changed from dentistry to medicine in the early ‘60s because of a fascination with the microscope and the microscopic diagnosis of disease. I went from dentistry to oral pathology to medical school with the explicit purpose of spending my life relating to tissues under the microscope. What a peculiar thing for a person to do! In retrospect, that was a nine year decision to go from dental school to medical school.

[...]I’d like to talk about the beautiful on three different, but interconnected levels: physical beauty, intelligible beauty and spiritual or moral beauty of the person.

Is there any beauty in a disfigured, diseased patient? For me, this is the richest and most fruitful aspect of my quest for the beautiful in medicine. The crown of what I have found in my search is some realization of the beauty of the world, the beauty of God in each person, even a diseased patient. I want to share this quote by Neils Stensen:

The crown of what I have found in my search is some realization of the beauty of the world, the beauty of God in each person, even a diseased patient.

“Beautiful are the things seen, more beautiful the things we understand, but by far the most beautiful are the things we do not know.”

I remember Stensen’s duct from anatomy, and that quote above shows the three levels of interconnected beauty that I’d like to discuss.

The telescope has also been a factor in my life. My life has been lived in both the micro- and the macro-world. I’ve lived with the electron microscopic structure of mitochondria, the diagnosis of certain tumors using an electron microscope, and I’ve lived with the light that hits my eyes that has come through the telescope after

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travelling for millions or billions of light years. I feel fortunate to have traveled these paths.

[...]I've always felt a oneness with what I was looking at, whether it was the normal microscopic anatomy of the lung, the kidney or crystalline structure in the urine. I always wanted to get a stone grinder so I could grind these stones and look at them through the microscope. I knew it would be wonderful. I can relate to that very well. But I was left "only" with the body and stars.

I'd like to relate these three levels of beauty to an experience I had when I was a practicing pathologist. A pathologist is a "doctor's doctor" who doesn't see private patients. I did general hospital pathology. In that work we looked at tissues; we worked with blood specimens; we saw some patients in consultation mostly with hematological diseases. We often did bone marrow exams.

On a frozen section routine, we would be available for the surgeon. When he or she called us, we went into the operating room, appropriately gowned, and received tissue from the surgeon. The surgeon then would ask "Is this benign or malignant?" If it was an obvious skin cancer, the surgeon would ask whether the margins were sufficient or what kind of cancer it was. Our task then was to examine this tissue.

I found myself—for some reason I don't remember when it happened or why I did it—trying to touch the patient. Whenever I was in the operating room, the patient was under general anesthesia. But for some reason I would always try to touch the patient. In retrospect, I might have been seeking some type of bonding or contact, some closeness with him or her. It was some loving touch between this person and me. I would probably never know, even see, this person again. Only the surgical area was exposed, but there was something to that experience.

I dissected this tissue and looked at it under the microscope, The wonderful patterns that appeared under the microscope were a driving force for me for 30 years. That physical beauty revealed the harmony of cells and even the disharmony of cancer cells. There is a terrible beauty in cancer cells in a way that's difficult to define in a strict philosophical-theological way. There's a terrible

beauty to malignant cells.

Let's turn to intellectual beauty. That beauty was revealed in the coming together of a diagnosis/ What is the best diagnosis? The training of years and the thousands of patterns come together. Poring over many books, trying to put together these different trained thoughts, linked with the intuitive! That's beautiful! "Gosh, remember seeing that 20 years ago. Now where was that?" These things were always there. I often remembered a tumor for 20 years—literally. I would see one of them and I would never forget the peculiarities of a particular cell structure.

In the intellectual realm I had a very peculiar experience of a "mathematical conversion," as I called it. At 35 years of age, I was shown Maxwell's equations and was told they were beautiful. At that point in my life I had not studied calculus. I intuitively knew that these equations were beautiful, and I cannot describe the power and the energy that swept over me. After that, I had to learn about them. That experience of power drove me and sustained me in teaching myself calculus. It led me into an undergraduate program in physics. That powerful intuition of beauty stayed with me until just recently.

I had a similar experience with Einstein's equations of general relativity. The great Russian physicists, Landau and Lifshitz, say that, of all the physical theories, the theory of general relativity is probably the most beautiful. I knew that intuitively but had no mathematical background to handle it. I worked up to some graduate courses in general relativity and I got just a taste of it. For whatever reason, that was the intellectual beauty in addition to the microscopic beauty that I have had the privilege to share in.

That physical beauty revealed the harmony of cells and even the disharmony of cancer cells.

Finally, I'd like to mention the spiritual beauty of the patient. This is the hardest because the other two types of beauty rely on the physical senses and the intellectual senses. This beauty can be taught and learned. Beauty is both in the eye of the beholder and in the object. But the perceiver, I feel, must have some training, some gift to see the beauty in the object being perceived. So, to say it's only in the eye of the beholder is incomplete. I want to take the middle road by saying that the perceiver must be prepared to appreciate the qualities inherent in an object.

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But these senses, the physical and intellectual senses, can be taught. But the spiritual sense, as Hugo Rahner says in his book, Ignatius the theologian, is a gift of God which comes with purity of heart. It is a pure gift given to those open to it. I believe that the spiritual senses are normal graced developments of the intellectual and physical senses.

I think the beauty of the soul is the capping, crowning beauty.

I think the beauty of the soul is the capping, crowning beauty. It's certainly revealed in Neils Stensen's words quoted above. So I see Christ/God-man as a middle of a triptych connecting the beautiful and the ugly. Christ is the supreme form of the coincidence of opposites. Ewert Cousins in his book, *Bonaventure and the Coincidence of Opposites*, attempts to demonstrate that this theme of the "coincidence of opposites" is Bonaventure's unifying thread. Christ is the coincidence of opposites and the crucifixion is the highest form of the coincidence of opposites. So I see the experience of Christ as the middle of the triptych between the beautiful and the ugly.

To see ugliness, to see beauty in a diseased patient—at least for me, from my own Christian background—requires Christ as the bridge. This is my essential connection.

Another feature of physical and intellectual beauty is the phrase used by David Granfield in his book, *Heightened Consciousness: The Mystical Difference*, that,

"Sadness is the child of beauty." He takes this from Edgar Allan Poe. The experience of physical or intellectual beauty always leaves one longing for more. There's always an incompleteness. Granfield relates this to the gift of knowledge by the Holy Spirit; our experience of this created beauty calls for a response to uncreated beauty. Man of us have gotten locked into created beauty and have found it a prison. Created beauty can only lead to uncreated beauty or should at least point in that direction.

The idea that "sadness is the child of beauty" is provocative in the sense that a lesser beauty leads to a higher beauty because incompleteness points to completeness.(pp. 79-82)

Beauty In Faith, Science, Technology

From Discussion Sessions:

Fr. Donald J. Keefe, SJ

I'd like to suggest that the last repository of the beauty, whether ethical, physical or professional, in whatever profession we have in view, is liturgical. We forget that beauty in this fallen world is always veiled. The communication of beauty, consequently, has to be, in the last analysis, sacramental. That term covers not simply the formal sacramental worship of the Church but all presentation of the truth, beauty, goodness, unity, whatever. It appears to me that the one place where there is a base for opposing an ongoing transformation of our society, which amounts to its reversion to the postulates of paganism, is the worship of the Church and the preaching of the Church.

I've had occasion to mention this before at this and other meetings. Everything that we have heard here, I think, summons us to the hearing of that preaching and

to the taking of that preaching of the Church's truth, sacramentally mediated, out into the world, which is in a continual need of conversion and reconversion. Thus, everything that we have to say here in terms of beauty has, as its bottom line, a need to return to that sustenance of the Christian vision which is always Eucharistic. The consequence of that sustaining vision is our participation in the mission of the Church. It is always simply an extrapolation for honest worship in truth, which is also a worship in beauty.

We tend to forget the enormous impact of the Church's worship. It depends ultimately upon the Risen Christ. Its efficacy, then, is *ex opere operato*, if I may use a much maligned and now obsolete phrase. The efficacy of the

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Church's worship is not by reason of our diligence, our virtue, our perspicacity or whatever. It has to do with bringing the work of Christ into the world and there simply entering into what He has done. This is, of course, a work of freedom. We are given that freedom by the pouring out of the Holy Spirit upon the Church, the fundamental consequence of the sacrifice of Christ.

But we need not count our resources which are slim, our "smarts" which are slimmer, and our resolution which is hardly there at all. All we have to do is rely upon the grace of Christ as it liberates us to do His work in the world. But this is not accidental or incidental. We do His work only by an ever more profound immersion in the worship of the Church.(pp. 174-75)

Beauty and Communications

by Fr. Bert Akers, SJ

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 of human recognition; ways of seeing, thinking, knowing out of a bygone era, already superseded by more advanced development, now that Man has come 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 mit!* 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.

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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 is 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

And that Tradition is itself a thing of great beauty, ever ancient, ever new, embracing insights hammered out over centuries...

The classic Transcendentals are very helpful and easy, once you get used to them.

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.)

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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

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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.

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-philosophical 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?

Then there is the fourth, the Other Transcendental. It is family, but not a member the family is proudest of.

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 mathematics (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

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(“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 moeve*: 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.

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,

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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! (pp.55-64)

~ This following essay on Beauty, written in 2013, echoes the themes of the previous 1993 articles. ~

The Evidential Power of Beauty

By Archbishop Charles J. Chaput

“Beauty is the battlefield where God and Satan contend for the hearts of men.”

-- Dostoyevsky, *The Brothers Karamazov*

“Late have I loved thee, Beauty so old and so new; late have I loved thee. Lo, you were within, but I was outside, seeking there for you, and upon the shapely things you have made I rushed headlong -- I, misshapen. You were with me, but I was not with you. They held me back far from you, those things which would have no being, were they not in you.”

-- Augustine, *The Confessions*

A friend once told me the story of how she first met God. She doesn’t remember her age; it must have been about 4 or 5. Her family lived in the countryside on the rim of one of our big eastern cities. And one June evening, cloudless, moonless, with just the hint of a humid breeze, her father took her out into the back yard in the dark and told her to look up at the sky. From one horizon to the other, all across the black carpet of the night, were the stars -- thousands of them, tens of thousands, in clusters and rivers of light. And in the quiet, her father said, “God made the world beautiful because he loves us.”

That was more than 50 years ago. My friend grew up and learned all about entropy and supernovae and colliding galaxies and quantum mechanics and the general theory of relativity. But still, when she closes her eyes, she can see that carpet of stars and hear her father’s voice. *God made the world beautiful because he loves us.*

Creation is more than an accident of dead matter. It’s a romance. It has purpose. It sings of the Living God. It bears his signature.

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The story of my friend offers several lessons we might consider this week as summer begins and life starts to briefly slow down.

First, the most powerful kind of witness doesn't come from a classroom or pulpit. It doesn't need an academic degree or special techniques. Instead, it grows naturally out of the lives of ordinary people - parents and spouses and friends; people confident in the love that God bears for them and eager to share it with others; people who know the world not as a collection of confused facts but as a symphony of truth and meaning.

Second, nature is *sacramental*. It points to things outside itself. God speaks and creation sings in silence. We can't hear either if we're cocooned in a web of manufactured distraction, anxiety and noise. We can't see the heavens if our faces are buried in technologies that turn us inward on ourselves. Yet that's exactly what modern American life seems to promote: a restless and relentless material appetite for «more,» that gradually feeds selfishness and separates each of us from everyone else.

Third and finally, every experience of real beauty leads us closer to three key virtues: *humility*, because the grandeur of creation invites awe and lifts us outside ourselves; *love*, because the human heart was made for glory and joy, and only the Author of life can satisfy its longings; and *hope*, because no sadness, no despair, can ultimately survive the evidence of divine meaning that beauty provides.

If the world we see taking shape around us today in the name of a false freedom often seems filled with cynicism, ugliness, little blasphemies and sadness, we need to ask why. And then we need to turn our hearts again to the God of beauty - Augustine's "Beauty so old and so new" -- who created us, who sings his longing for

*We can't see the heavens if our faces
are buried in technologies that turn
us inward on ourselves.*

us in the grandeur of the world he made, and who renews our souls.

God lives in the summer rain, the stars in the night sky, the

wind in the leaves of the trees. He speaks to us through a creation alive with his love. We need to be silent, and watch and listen. And then we need to join in nature's symphony of praise.

*Reprinted in ZENIT (Zenit.org),
Philadelphia, June 5, 2013*

Gems from the Past on Beauty

February, 2006 - *Fr. Brungs writes to a woman religious and retired biology professor about the role of science in religious education and the wonder and religious awe science can inspire.*

"I can remember an event when I was working on my dissertation. I had made a couple of x-ray pictures of my sample and was watching the images coming up in the developer. I was simply astounded by their beauty and by the thought that I was the first person in the history of the universe to look on the symmetry in a crystal of boron. I must have looked at that picture for a couple of hours reflecting on the beauty that God had put into a crystal of boron. It was an amazing couple of hours"

ITEST Bulletin: Fall 1992 - *Fr. Brungs writes in "From 'Dotage to Anecdote'."*

"God did not set up a world where reason was the dominant end and means. I believe in my heart that he set up a world open to my (and everyone else's) spontaneity, passion and love. I see more clearly and yearn for more deeply a world where beauty is at least as important as reason—and vastly more important than logical planning... I'd like a world where we make a spontaneous contribution to the growth of the Kingdom; even if it's no more than an unplanned moment of awe before the beauty of a flower or a sunset or a person. Or God."

Reflections on the March 11, 2011 Disaster in Northeast Japan

by Keiichi Furuya, Emeritus Professor of Engineering,
Tokyo University of Science and Keisen University, Japan

Introduction:

Two years have passed since a large earthquake, a subsequent Tsunami and explosions at the Fukushima Daiichi Nuclear Power plant occurred on March 11, 2011.

On the second anniversary of the disaster national-wide newspapers cited the statistics on the damage and the recovery. The numbers of the dead and wounded and the lost were very great, and have made the people of Japan re-evaluate their perception of nuclear power—even though the newly elected conservative cabinet is trying to push their aggressive policy toward the return to nuclear power dependency.

We found a great difference between the types of the after effects of a natural disaster and man-made radioactive disaster. Most damaged regions from the Tsunami are in the process of reconstruction of their lives at their towns and villages, while in radioactive polluted areas almost ten thousand inhabitants are still suffering the life of refugees.

Fortunately the extent of the radioactive fallout contamination was less than 40 percent of the assumed total emission from the plant.

Fortunately the extent of the radioactive fallout contamination was less than 40 percent of the assumed total emission from the plant. The seasonal northwest wind blew most of the radioactive plume toward the Pacific Ocean on most days and did not cause serious damage to other neighboring regions.

Reflections of a Christian man of science

We have been accustomed to thinking of nuclear science as a different field from ordinary science and technology. We have trusted the specialized scientists, engineers and administrators too much. When Japan imported the first nuclear power plant in the early part of the 1950s there were intense discussions between pure scientists and engineering scientists. The “pure” scientists insisted on their freedom to do nuclear research but objected strongly

to the applied use of that research because of the difficulty involved in controlling its effects on human health and safety and avoiding subsequent tragedies. Also they had a sense of guilt over the huge tragedy at Hiroshima and Nagasaki. The engineers were rather optimistic because they felt the difficulties would be solved as their tempting targets to overcome. It also provided a good opportunity to catch up to the level of technology already achieved by other countries.

Thus, the first nuclear reactor was imported from the United States at Tokai in 1956 because politicians and economic administrators wanted a swift recovery of national economic power following World War II. They had no clear idea, however, of how to treat radioactive waste.

In the 1990s the problem of waste fuel disposal in Japan became quite evident.

In the 1990s the problem of waste fuel disposal in Japan became quite evident. A waste fuel treatment plant at Rokkasho Aomori was constructed with a huge budget; yet, it is still not in operation after 19 postponements. A nuclear fast-breeder test reactor also is not successful and at present any testing is prohibited because of their neglect to practice regular maintenance. No underground disposal site was chosen in the earthquake rich country. Therefore, with neither re-processing nor storage, waste fuel rods are now stored in a pool on the upper floors of each operating nuclear reactor building. Because of residual heat emitted by the rods, we have to keep cooling them as the case at the damaged Fukushima Daiichi Power Plant.

Nuclear power plants are usually built in the less populated parts of the country, where local government suffers from an outflow of the younger generation, a meager tax income and poor social services. On the one hand nuclear power plants bring opportunities for employment subsidies, increased tax revenue and better living conditions for the citizens, and an encouraging atmosphere for people

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from other areas to seek employment. These funds were mainly spent for the construction and maintenance of their infrastructure with the excuse of the infinitesimal danger. Money and the “good things” it brings blots out any sense of danger in these situations. Paradoxically this green rich circumstance attracted young ambitious people who want to live an ecologically sound life with organic farming.

Can we technologists prevent nuclear power plant accidents? I doubt it. Ordinary technologies are checked through risk-probability analyses. The probability of an aircraft accident, for instance, is set at the level of a natural disaster. However, in the case of nuclear power technologies, it is impossible to calculate the risk-probability analysis with perfect precision. Moreover, just as in the case of information noise, the risk cannot be reduced below the level of unknown, unsuspected risks, human errors in extraordinary, complex organizational (mechanical and managerial) systems for safety. Scientists need to consider seriously the intellectual, moral/ethical and sociological consequences of this entire matter of nuclear power.

The cost of nuclear power has been calculated for commercial use without including the costs for possible maintenance, disposal and treatment of radioactive waste, closed reactors, and recovery. We and our children and grandchildren will have to pay higher taxes in the future. Is this what we want to leave to our posterity? A standard of living, a level of environmental quality that will be far below what we enjoy today?

Proponents of nuclear power recite the demerits of natural gas, oil and coal power, with problems of CO₂ emission and high costs, neglecting the potential merits of renewable energies for the long range future; but in truth these proponents try to ignore the higher costs that will accrue for the maintenance of their existing nuclear systems.

As Christians and scientists we have a responsibility to prepare to live in a world with fewer and fewer oil and uranium reserves for our posterity.

As Christians and scientists we have a responsibility to

prepare to live in a world with fewer and fewer oil and uranium reserves for our posterity. The present economic ideology (of more and more mass production and mass consumerism) is leading us to maintain our level of affluence. This must change as soon as possible. We are approaching the edge of the falls economically and culturally. Nature is God’s creation. We should never destroy it with our technically unmanageable, manmade radioactivity, even if we happen to find a way to control it in the future. We should practice the virtue of modesty in our life style.

In today’s globalized world, it is very risky for national leaders to be the pioneers of a new policy, because it tends to weaken national economic power in terms of the economic index. People fear unemployment and deflation. A majority of Japanese people reject the idea of nuclear power, but they lack the means (political and economic) of making it a reality. This often leads to infighting among the proponents and opponents of nuclear power, leading to a certain sense of futility on both sides.

Church Statements

I am not well acquainted with the position of the Catholic Church in Japan—as a layman in the Protestant Church—but I will detail their most recent activities on the topic of nuclear power and nuclear energy. I do not know how much Christian men of science have involved themselves in these activities.

The Catholic Bishops’ Conference of Japan issued a statement on June 27, 2011 titled “Abolish Nuclear Plants Immediately: Facing the Tragedy of (the) Fukushima Daiichi Nuclear Power Plant Disaster.” Having the sense of regret on sentiments expressed in their 2001 statement on “Reverence for Life” the bishops wrote... “to use nuclear energy effectively we need the wisdom to know our limits and exercise the greatest care. In order to avoid tragedy, we must develop safe alternative means of producing energy.” The bishops urged immediate abolishment of nuclear power plants, giving this reason: “We, as members of the human race, have responsibilities to protect all life and nature as God’s creation and to pass on a safer and more secure environment to future generations. They continued “In order to protect life, which is so precious, and of a beautiful nature, we must not focus on economic growth by placing priority on

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profitability and efficiency, but decide at once to abolish nuclear power plants.”

On December 22, 2011, Bishop Hiraga, President of the committee against BURAKU (Minority Discrimination through Human-Rights Approaches) pointed out the country-wide discrimination against immigrant people from the affected areas and the exclusion of products from Fukushima, arose from an unreasonable phobia about radioactivity. Moreover, the Catholic church in Japan, active in interreligious dialogue, took part of a meeting of the International Conference of Religions for Nuclear energy and discussed the mission of the various religions, emphasizing the shared role of providing aid to the victims of the disaster.

At the 39th Study Conference of Religious People on Peace, held by the World Conference of Religions for Peace in Japan in January, 2013, the main subject was “On Power and the Contemporary Society: Responsibility for our Future.” Catholic people took an active part.

In those interreligious dialogues the majority of attendants were Buddhists and Shintoists. Stress was given to compassion—suffering with others who have undergone great difficulties, reverence of Nature and living a modest life style.

During the first year, following the disaster, not only religious groups, but GOs, NPOs and others volunteered to ameliorate the suffering of victims as far as possible. More energy is being applied to that endeavor even to this day in Japan.

Conclusion

Addressing the issue of radioactive contamination of the environment requires tremendous amounts of money, labor, time and space. Not only numerical data,

but intangibles should be taken into account. The loss to the Japanese community of family, friends, citizens and large parts of populated areas must be everyone’s

*Realistically, we must resolve to
prepare for the next possible
nuclear disaster...*

concern. Realistically, we must resolve to prepare for the next possible nuclear disaster, including transnational radioactive contamination, in the coming decades.

We scientists, by speaking not arrogantly but with modesty, can at least provide the people with better scientific information about any situation. Still it is very difficult to explain the health effects of low level radioactive random exposure to mothers who are anxious about the effects on their born and unborn children.

Parents in remote areas also worry about possible radioactive intake from food and in the playgrounds where their children spend time.

*We must not be economically rich,
but be ecologically rich.*

“We must not be economically rich, but be ecologically rich. Although there may be other harmful outcomes from the nuclear power plant disaster, we must start at least incrementally to urge our politicians, administrators, economists and entrepreneurs to be aware of the religious, human and ethical responsibility we all have for our posterity and our earth—God’s creation and God’s gifts.

Dr. Keiichi Furuya graciously acceded to our request to write this article reflecting his personal experience and that of the Japanese people in general to the earthquake, a subsequent Tsunami and explosions at the Fukushima Daiichi Nuclear Power plant in 2011. We are grateful to him for spending time and effort to produce this article. We invite ITEST members or readers of this bulletin to respond to Professor Furuya or to write their own reflections on the global effects this disaster, or others like it, natural or “man-made,” may have had on the environment.