

INSTITUTE FOR THEOLOGICAL ENCOUNTER  
WITH SCIENCE AND TECHNOLOGY  
(ITEST)  
NEWSLETTER

Volume II, Number 3

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For Your Calendar:

The October ITEST Conference will follow the recent policy of reprising the March Workshop of the previous year. Thus the topic of the October 3-5, 1980 Conference will be "Governmental Intervention and Regulation." We are attempting to bring together the March, 1979 "faculty" and one speaker to extend our discussion. Details will be sent out by mid-August.

The March 13-15, 1981 Workshop will be devoted to the industrial use of recombinant DNA. We are planning to bring together a scientist working with recombinant DNA techniques, lawyers involved in the recent patent suit before the U.S. Supreme Court, someone from the media, and a political scientist-ethician.

The October 9-11, 1981 Workshop is still in the planning stage. The topic will be announced as soon as it is decided on by the ITEST Board of Directors. Any suggestions would be appreciated.

ITEST News:

The response to our 1980 membership drive has been good, but not as good as we had hoped. We have 460 members (in 25 countries), up a bit from last year's record total of 432. The strength of ITEST resides solely in its members. The members are, and must be, apostles to the churches and to the scientific community. We ask you to spread the news of ITEST to those of your friends and colleagues who are engaged in either or both of the poles represented in this group. Too many of us find ourselves isolated in our deep concerns about the scientific enterprise or the life of the church. We need communal support and communal opportunity for sharing concerns and approaches to solution. The community that is ITEST needs what many can provide it and in return we would like to provide a center (a home, really) in which concerned people can gather.

Bibliographical Notes:

In the last issue (April, 1980) we initiated the practice of publishing selected notes on the publications by ITEST members. We continue that listing here: we regret that we can publish only partial bibliographies at present. Some of the publication lists we have received would take up a great deal of this issue.

1.) Dr. Enrico Cantore, S.J., (Institute for Scientific Humanism, Lowenstein Center at Fordham University, 60th Street and Columbus Avenue, New York, N.Y. 10023).

Articles:

"Humanistic Significance of Science: Some Methodological Considerations", Philosophy of Science 38 (1971), pp. 395-412.

"Science and Value: The Challenge to Self-Humanization", in Science and Absolute Values (Proceedings of the Third International Conference on the Unity of the Sciences; London, Nov. 21-24, 1974) (Tarrytown, N.Y.: International Cultural Foundation, 1974) Vol. I, pp. 389-420.

"Science as an Experience of the Absolute: Religious and Moral Implications of Research", in The Search for Absolute Values in a Changing World (Proceedings of the Sixth International Conference on the Unity of the Sciences; San Francisco, Nov. 1977) (New York: International Cultural Foundation, 1978), pp. 1147-1160.

Pamphlets:

Human Dignity, Science and Growth: The Humanistic Nature of Development (New York: World Institute for Scientific Humanism Publications, 1980). This is a revised version of a background paper for the Non Governmental Organizations Forum, United Nations Conference on Science and Technology for Development, Vienna, August, 1979.

Leadership for Human Dignity: The Developmental Responsibility of Scientific Professionals (New York: WISH Publications, 1980). A revised version of a background paper for the International Symposium on Science and Technology for Development, Singapore, January, 1979.

Pivotal Humanness of Science: The Cultural Implementation of Development (New York: WISH Publications, 1980). A revised version of a background paper for the Task Force on Cultural Aspects of Science and Technology for Development, coordinated by Dr. Cantore on behalf of the United Nations Non Governmental Organizations Committee in preparation for the U.N. Conference on Science and Technology for Development.

Books:

Atomic Order: An Introduction to the Philosophy of Microphysics (Cambridge, MA: The M.I.T. Press, 1969; paperback edition: M.I.T. Press, 1977).

Scientific Man: The Humanistic Significance of Science (New York: Institute for Scientific Humanism Publications, 1977; pp. xviii + 487).

2.) Dr. Claude A. Frazier, M.D., 4-C, Doctor's Park, Asheville, North Carolina 28801

Dr. Frazier has authored 8 medical books on allergies as well as 9 books written for non-professional audiences. Among other books by Dr. Frazier the following may be of interest:

Notable Personalities and Their Faith, Independence Press, Independence, Missouri, 1972.

Is It Moral to Modify Man? edited, 1973. Thomas Nelson, Publisher, Springfield, Illinois.

Faith Healing: Finger of God? or, Scientific Curiosity? edited, 1973. Thomas Nelson, Nashville, Tennessee.

3.) Professor Eugene M. Klaaren, Associate Professor of Religion, Wesleyan University, Middletown, Connecticut, 06457

Religious Origins of Modern Science, Eerdmans, 1977, Grand Rapids.

"Utopian Currents: A Report," NICM (National Institute for Campus Ministries) Journal, Winter, 1980, vol. 5, No. 1, pp. 6-13.

## ANNOUNCEMENTS

### 1. International Engineering Ethics Project

"Ethical dilemmas facing engineers practicing in a culture other than their own is the topic of a current research project. The study will identify and collect information concerning ethical conflicts that can arise in all areas of engineering work -- design implementation, management and interaction with local personnel and institutions.

"Individuals who can contribute to this study are asked to contact either of the co-Directors: Professor E.C. Jones, Department of Electrical Engineering, Iowa State University, Ames, Iowa 50011; or Professor C.A. Smith, Department of Philosophy, University of Missouri-Rolla, Rolla, Missouri 65401. All information received will be treated confidentially."

### 2. First Biennial Meeting of the Institute for URAM: Toronto, August 24-27, 1981.

The Institute for Encyclopedia of Ultimate Reality and Meaning is announcing its first biennial meeting for Monday, 8:00 p.m. Aug. 24 - Thursday, 12:00 noon, Aug. 27, 1981 at the Medical Science Bldg., U. of Toronto, Toronto, Canada.

The Institute extends its invitation to professors teaching at universities and experts involved in scientific research to attend the meeting and participate in one of the three main sections of the meeting either as a research-member (presenting paper) or research-promoter (commenting on papers) or collaborator (debating and raising questions).

The objective of the meeting is further research initiated through the journal Ultimate Reality and Meaning.

General topics -- like how do Arts, Politics and Economics, Sciences, Philosophy and Religions affect man's effort to find meaning in his world -- will be discussed in the Section, General Division I-V.

Particular instances -- like how did different individuals, peoples, systems, etc., from the beginning of history until the present contribute to a better and deeper understanding of ultimate

reality and meaning of human existence -- will be discussed in the Section, Historical Division I-IV.

Address all communications to Institute for URAM, 15 St. Mary Street, Toronto, Ontario, M4Y 2R5, Canada.

### CRAPS PLAYERS OR BOWLERS?

Robert Brungs, S.J.  
Director: ITEST

The last several months have been a very interesting time in the science/theology field and in the world we live in. As I sit at my desk in air-conditioned comfort, the Midwest is sweltering through the worst heat wave in almost thirty years. In the Northwest Mt. St. Helens is quiet for at least a while and the earthquakes in the vicinity of Mt. Hood have subsided. In the East the venting of radioactive krypton continues at Three Mile Island. In the South my sister and her family are in the process of cleaning up after a tornado. Throughout much of the country there is a threat of severe drought. All in all it has not been a serene several months.

On the level of humanly controllable events the Supreme Court has upheld the right to patent certain type of engineered life forms. In Paris Pope John Paul II spoke at length to the members of UNESCO about culture, education, and science. Almost at the same time the American Catholic Bishops hammered the next to the last nail into the coffin of their Committee on Science, Technology and Human Values. The Love Canal remained in the news. Jimmy Carter lost his lead to Ronald Reagan in the polls and the Republicans met in Detroit. All in all, the last few months have not been uneventful.

I have found some of the attitudes surrounding these events somewhat curious. And I would like to do something of a stream-of-consciousness analysis of the mood I see in this country. At least I'll try it and see how it turns out. It's too hot here to attempt close analysis.

Except for the people who live in the relatively near vicinity of Mt. St. Helens that eruption and the enormous impact it had on the environment of the Northwest has raised little more than curiosity in the rest of the country. Despite the large number of deaths -- over 1,000 right now -- caused by the present heat wave in the lower and middle Midwest, it remains only a topic of conversation to most. We seem to shrug off the uncontrollable with a certain amount of ease. Unless we're immediately affected we don't seem to worry very much. "After all", we seem to say, "what can we do about it?"

When it comes to things like the Love Canal, Three Mile Island, or the Supreme Court patent decision we show much more agitation. We show much higher anxiety, even fear, about science and technology -- things that we can basically control. There is a large and growing body of literature stating that our technology is radically out of our control. The shadow of Jacques Ellul falls darkly over much of that literature. Even discussion of the role of science and technology seems to center almost always on the problems arising from them. Now, certainly, such concern is not invalid or



even inappropriate. It is not the content of problem-discussion that is troublesome. It is the basic view out of which the discussion arises, the mood of the discussion, if you will. There will be a great difference in raising problems if we start from a position such as "we shouldn't allow these advances at all" or if we begin with the question "how can we make sure that these new understandings and capacities will be used for the true betterment of mankind"?

In this regard, perhaps we can change the metaphor a bit by quoting a United Press International article (unattributed) that was published in the St. Louis Post-Dispatch, Tuesday, July 15, 1980, p. 1-D.

An education researcher believes more and more Americans are shifting toward the view that they have little control over their fate, so why worry about it.

That's the craps player's outlook, says Mary Budd Rowe, director of the National Science Foundation's program for research in science education.

She describes the contrasting viewpoint as the bowler's perception of the way things work. A bowler recognizes that luck may have a role in what happens, but he also feels there is a relation between how he plays the game and the final score.

On the other hand, Rowe believes, the craps player sees the world as a big game of chance. "There's no relationship between what he does and the returns that he gets. He depends on the whims of other people and on how luck is running at the time," she explained. "For such people, planning ahead, evaluating the consequences, being persistent in the face of difficulty make no sense because the world is fundamentally conceived as being whimsical."

"The bowler knows there's uncertainty, but he thinks that -- according to how he plays the game, reads out the environment, uses feedback and modifies behavior -- he can raise the score on his own behalf."

Rowe says it appears that more people are leaning toward the craps philosophy because of the increasing complexity of issues facing the public. She cites, for example, the barrage of warnings against eating this or that food because it might be harmful.

"After a while, the effect of all of that makes people kind of give up," she said. "That's a characteristic that's growing in the culture."

There cannot be any real doubt that Rowe's thesis is valid. I believe we all run into the attitude that she describes. In the face of uncontrollable mechanisms like Mt. St. Helen's or the heat wave in the Midwest, etc., it makes little sense to do more than protect oneself as best one can. But that same attitude with respect to human events that are basically controllable is a sign of despair. And one can wonder why there is such despair in the most affluent, strongest country in the world. I mean it when I say that, despite all our problems, this is still the best country (and the best time to live in it) that ever was. And how many million immigrants (legal or illegal) agree with that? Why do they see something that we don't see?

There is no doubt either that the issues facing us are very complex. But the true problem in the country is not that our answers to these issues are too complex. It is that they are far too simple. We are facing all these complexities in what can be described as a survival mode: if we don't pay any more attention than we have to maybe they'll go away. It's too much trouble to try to unravel the technological know -- we'll cut the Gordian knot by not doing anything. There is little enthusiasm, almost no spontaneity in our society. There is little hope and seems to be much fear. But this is more a fear of the known rather than fear of the unknown. Again, how can we explain (and cope with) this sense of hopelessness?

Most of us in ITEST are educators in one way or another. I believe that we can at least ask ourselves to what extent we have contributed to this sense of hopelessness. For myself, I can confess to stressing the complexities of issues without providing much in the way of a synthetic approach toward a solution. But to fail to do the hard work needed to point toward some solution is to fail in the process of education. And as bad as that failure is an even worse one is to ignore the issues that so agitate us.

In this regard it is interesting to note the media coverage of the Pope's talk to UNESCO. One aspect of the media's task is education. But in the news coverage I saw this was the material quoted:

Although science is called to be a service to men's lives, only too often do we see that it is enslaved by these destructive goals, destructive of the true dignity of man and human life. Such is the case when scientific research is itself directed toward these goals or when its results are applied to ends contradictory to those of humanity. This can be verified as well in the realm of genetic manipulations and biological experiments as well as in those of chemical, bacteriological or nuclear armaments.

That was the extent of media coverage in the papers and magazines that cross my desk. Although Science quoted a few more sentences the coverage was far more negative than positive. It would not have taken much effort to quote the final paragraph of the Pope's message to the men and women of UNESCO: "My last word is this: Do not cease. Continue. Continue always." Not a message of hopelessness or despair.

In fact, there is a whole section on education that is important to us insofar as we are educators.

Twice, pointedly, and deliberately, the Pope quotes St. Thomas Aquina's Commentary on Aristotle: "Genus humanum arte et ratione vivit" (The human race lives by art and reason). If I may I'd like to quote at some length a section of this quite long address:

Educational systems are organically linked to the different ways science is practiced and popularized, which is the purpose of establishments of higher education, universities and also, due to the actual developing of specializations and scientific methods, specialized institutions. These are institutions which it is difficult to speak of without deep emotion. They are the work-benches on which man's vocation to knowledge, as well as the essential link of truth to humanity as the goal of knowledge, become a daily reality, become, in a certain way, the figures of science, around whom gather the young researchers dedicated to science and the applications thereof, as well as the multitude of students attending these centers of science and knowledge.

We find ourselves here, as it were, on the highest rungs of the ladder which man has climbed from the start toward knowledge of the reality of the world surrounding him and toward the mysteries of his humanity. This historical process has reached unknown possibilities in our age; it has opened unsuspected horizons of human intelligence. At this point it would be difficult to go into details, for on the path of knowledge, the orientations in specializations are as numerous as the development of science are rich....

As much as we are edified by scientific achievements -- edified and given deep joy by them -- in the advance toward the disinterested knowledge of truth, which scientists serve with the greatest devotion, at times risking their health or their lives, so equally must we be concerned by everything which may contradict the principles of objectivity, anything which could make them an instrument for attaining alien goals. Yes, we must concern ourselves with all that proposes or presupposes these non-scientific aims by requiring scientists to serve their purposes, without allowing them to judge or decide, in complete independence of spirit, on the human and ethical honesty of such aims, or by threatening that scientists will have to contribute to these aims.

Later in the address the Pope stated that "the cause of mankind will be served if science and conscience become allies." This says nothing new, but it does act as a rather succinct statement of the contents of the address. Although Pope John Paul warns against science being used contrary

to the proper development of mankind (i.e., that "to be" is more important than "to have"), the basic thrust of his address is quite positive, quite hopeful. Can we educators do more to stress the great hope that we should legitimately have? It is, I believe, important to do more than show all sides of a question in all its complexity.

I believe that some of us in science (and especially in those areas which for lack of a better designation we can call science/society concerns) have been partly beguiled by non-directive approaches. All we are to do, it would seem, is present all the sides of an issue and let everyone make up his or her own mind. Yet, if that analysis is true, our experience and expertise is being badly misused. Or don't we have any confidence in our ability to weight the various aspects of the issues, to evaluate the relative importance of the parts of the whole?

Or do we do just the opposite? Do we look at an issue fraught with great complexity -- like nuclear power, say, and then settle for a slogan like "no nukes is good nukes." How many of those we educate know that "radiation" is not a univocal term? Who know that there are different kinds of radiation with different properties? Or how many of those we teach are aware of basic biology or know much of anything about the power and limitations of computers? How many even care?

The relatively new information technologies demand that our educational institutions (and ITEST and us as individuals who are concerned) learn and teach our "students" what these technologies can accomplish, what kind of threats they may pose for society, how they can be used to enhance human life and to lead to human fulfilment, how they can be incorporated into our subjective sense of the right, the beautiful, the timely, the worthy, and the just. In an information-based society, as many people as possible should be trained to have access into the elite system of judgment makers, decision makers. As many as possible need access to these systems. We also need the mobility of virtually every member of the political and social systems potentially to become part of that elite. Otherwise, for example, we shall perpetuate a traditionally stratified society with its inherent class structure and based on sex, ethnicity, economic background, or education. As Meredith Watts has stated at a recent ITEST meeting: without wide access and mobility, we shall simply make such stratification cybernetically more efficient. Otherwise, we may well surrender control of society (and of its members) to those who would control us far more efficiently than has been possible in the past. There is a battle here to be lost, and if it is lost, it will be lost bigger than our predecessors ever lost it before. But again, what do we do about it? Are we going to throw up our hands at the complexities and effectively opt out? If we do we shall have lost the battle in an absolutely extravagantly way. Or, to use Rowe's terminology, are we going to throw craps with these new technologies?

There seems to be a fear in the general population, a fear of the scientific community and a fear of scientific progress. Visions of Brave New World and 1984 are regularly conjured up, and not always without reason when one reads some of the more euphoric output of some scientists. But this fear is seen in expressions like "egghead", "ivory tower", "intellectual" when used as an epithet, etc. The scientific reputation has been stained by Dr. Frankenstein, Dr. Strangelove, and others. The Hollywood view of science -- especially in B-grade science-fiction movies -- has not enhanced the public's respect for science. Scientists are either evil or, when they are good, they come across as intellectual and social prigs. Moreover, and most devastatingly the public blames scientists for atomic, hydrogen and neutron bombs, many of the more exotic forms of pollution, and now a spectre raised by recombinant DNA research and the patenting of new kinds of bacteria. The public un-ease



with science may be difficult to document but it can be felt. I'll just advert to a dimension that will arise with the Supreme Court patent decision. It is not entirely new. But with many scientists rushing to patenting, what effect will be felt on scientific "disinterestedness." This quality of disinterested objectivity will be weakened -- at least in the view of the public -- by all the money to be made in bio-industry.

What we don't seem to advert to often enough is a corresponding un-ease with the public on the part of the scientific community. There seems to be a difficulty in the scientific community to accept some sort of public accountability. There have been numerous indications of an unwillingness to dialogue with non-scientists. There was a fair amount of feather fluttering on the part of scientists when the City Council of Cambridge decided it wanted some say over the precautions taken in recombinant DNA work in that city. We heard that the lay-people on the City Council couldn't possibly understand the content and the issues; that they were trying to stifle science; that they were a bunch of anti-scientific yahoos. Of course, the sequel proved that untrue. When scientists are uneasy they seem to retreat behind a cloud of jargon. They're not much different from the doctors who use all the technical names for things when talking to their patients.

Technical language has an obvious value when one scientist is talking to another in the same field. It is a very helpful shorthand. Moreover, new concepts or new discovery may often require a new vocabulary. Professional-to-professional discussion is a very legitimate forum for highly technical language. But in professional-to-non-professional discourse technical language becomes jargon, and hinders rather than helps communication. Jargon in this sense is far more destructive of communication than, say, sloppy speech or inaccurate use of language. English is a very rich language and we really ought to use it more.

The use of understandable English is important because the public and the scientists are natural allies -- or at least should be. A relatively unexamined problem is science's growing dependence on the federal dole. This may well change in the life-sciences because of the Supreme Court's allowance of patent rights. A lot of private venture capital will certainly be available. But in the rest of science it is legitimate to ask about science funding practices. Pragmatically, the federal government controls the bulk of "pure research." It is government officialdom that decides who will get how much for what research. This is not coercive control, to be sure. The government does not often, if ever, issue an edict that "thou shalt not do such and such research." But in the contemporary scientific situation the government's control is nonetheless effective. Control through funding can be just as strong as control through coercion.

The scientific establishment -- essentially since World War II -- seems to have become just as self-indulgent as society as a whole. And so have educational institutions. Both have allowed themselves to become dependent on federal funding and, lacking that, much research simply is not done. Granted that there are a thousand good reasons for this, there is still the aspect of government control. All the good reasons in the world won't make that go away.

But the public has a real stake in the scientific enterprise. And the public can help the scientific community free itself, at least to an extent, from governmental control. And, certainly, the scientific community has a stake in public attitude and in public support. We should be speaking with each other. Since so much of contemporary science has immediate impacts on our society -- nuclear power,



computerized technologies, computers themselves, etc. -- the public-scientist dialogue would be of enormous value. Perhaps if we could understand better there would be less anxiety, less sense of powerlessness.

Also, if only we could realize that many of our problems would be mitigated if we were more community-orientated. Undoubtedly at least some of our social/technological problems have arisen out of the breakdown of communities in our country. The Yellow Pages ads on TV make the point that one out of three people move each year. In a society that is that mobile, community stability is difficult. As Dr. Robert Hutton stated at the March, 1980 ITEST Workshop: "I am involved in the Air Force in training family practitioners. There are five Air Force Centers that are concerned with such training. To me it seems an ideal to have a family practitioner who understands the whole person, the family, and the community. Even if this were to come about, its success would be limited by the very nature of our society which has an overwhelming tendency toward mobility. How are you going to treat a family if it won't hold still? Who knows what the future holds for us in that regard. We are about to run out of gasoline. Maybe that will change some things."

Perhaps some of our anxiety in the U.S. is due to a sense of personal isolation, of "unrootedness." The Europeans, for instance, do not seem to show the same level of anxiety over the present and future that we do. Perhaps the unspoken wish that lies behind so much of our social unrest is this sense of personal isolation. Some of that isolation can be ascribed to our mobility. But some of it must be ascribed also to the nonsense of the 1960's and 1970's with its emphasis on self-fulfilment. Indeed we are to fulfil ourselves, but in community. The self-fulfilment of the "Me-generation" has further fragmented our society. "Me-first and mine" will not make our problems more tractable or our anxieties less.

Individuals, by and large, are powerless in the face of great industrial operations, big government, technological dislocations, massive specialization (if those words are not self-contradictory) of areas of knowledge, etc. In the latter case there is the old saw about knowing more and more about less and less until we know everything about nothing. How, then, can we communicate? Must it always be "me against the world?" Can't it at least be "us against the world?" or better, "us with (and for) others"? Communities of one kind or other -- whether familial, geographical (local), ethnic, professional, educational, or religious -- can help us cope with the anxieties and fears and powerlessness. There is strength in community. With others we can do a better job of controlling the controllable. There is really no need to look on the future with the "craps players" mentality. Let's merely mention the fact that there are bowling leagues but I don't know of any craps-playing leagues. To form communities presumes that things can be made better, that there is a relationship between input and output.

On many occasions since the ITEST conference at Villa Cavalletti in Grottaferrata, Italy in 1972 people have referred to a statement that came out of one of the small group discussions. It is important enough to quote at length from the Proceedings:

.... It has been stated several times that the churches must move into the social arena, presumably with a more or less politically oriented corporate stance, in order to change the social structures. The supposition that this is the role of the churches, to change social structures through corporate action, is quite troublesome. Historically is this the way the church

operated, say, during the age of persecution under the Roman Empire? Is it even the way the church operated during the height of its political power during the medieval period, when it was for many practical purposes the social structure itself? Rather than being involved in social in-fighting should not the churches offer alternatives? Take the alternative of offering hope. There has been a great deal of talk about power. There is a statement made by a liberal mid-nineteenth century liberal Protestant, Horace Bushness, that power follows the direction of hope. If this is true, the churches could lead by providing the hope. If the churches would not only address themselves to society in a critical, prophetic way when they see injustice, but would also provide a direction of hopefulness for its membership, as well as for the world, then they would have recaptured the leadership of the society....

It is well to remember in this regard that the churches have a two-dimensional stance with respect to the world. One dimension of that stance has to be a "battle-stance" over against the world, as the world's critic. The churches cannot be destructive critics; they cannot speak critically out of time. The second dimension is the churches' faith in a God who loves it and loves the world. He is the world's creator and the world's sustainer. This is the basis for hopefulness. God's prophets and apostles could be critical of the world precisely because of their hope in his promises. To be critical in a positive sense a man must be liberated through faith and hope. To be sure, a man can be critical because of fear and desperation; then he is shrill and takes his fear out on everyone else. The true, liberated critic can be more radical, in the original meaning of the word, because he can move to the depths of the problem. He can afford to face it in its reality because he knows there is a way to handle it. There is an organic symbiotic relationship between criticism, judgment and promise.

What is true of churches is true of each of us. Freed by the promises of Christ, what reason can we have for fear? Concern, indeed, but not fear. Hope for the betterment of God's creation -- and the discernment needed to evaluate what is indeed the better -- is far better motivation than fear. Human affairs will not escape Jesus Christ's Lordship of creation and of history.