

## Summary and Evaluation of The Second International Conference on the Unity of the Sciences

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*Isamu Watanabe, Conference secretary-general*

The Second International Conference on the Unity of the Sciences (SICUS), held at the Imperial Hotel in Tokyo, Japan, from November 18-21, 1973, convened 60 scientists and scholars from 18 different countries centered on the theme of "Modern Science and Moral Values."

Organized by an executive committee of Japanese scholars, headed by Dr. N. Sawada, professor of philosophy at Keio University, and sponsored by the International Cultural Foundation, Inc., the Conference provided a forum in which the participants could share their strivings to resolve the dilemma of the quantitative nature of science and the qualitative nature of values.

This Conference was the fruit of the close collaboration between the executive committee which organized the academic program and the Conference secretariat headed by the secretary-general, Mr. I. Watanabe, JCF. The Conference secretariat conducted all of the administrative aspects of organization and provided the Conference service staff as well. In this way, the academic deliberations, resting well upon the warm service of the staff, proceeded with a remarkable sense of personal trust and mutual purpose which greatly enhanced both their academic and their personal value.

### **History of ICUS**

The International Cultural Foundation, Inc., sponsor of the Second International Conference on the Unity of the Sciences was founded in Japan in 1968, following the inspired initiative of its founder, Reverend Sun Myung Moon. Having now (in 1973) expanded to be truly international in scope, the ICF has recently been incorporated with headquarters in New York City.

The International Cultural Foundation, Inc. aims to help fill a critical gap in the spectrum of foundations now proliferating nationally and internationally. It seeks to facilitate the global convergence toward an international culture by promoting cultural exchanges among nations, and the academic studies and researches which hold promise of making vital, fundamental contributions to world goodwill and peace.

In 1972, Reverend Sun Myung Moon initiated the actions which resulted in the convening of the First International Conference on the Unity of the Sciences in November 1972 at the Waldorf Astoria Hotel in New York. Under the theme "Moral Orientation of the Sciences," 20 scientists and scholars from eight different countries deliberated on the possible moral orientation of science which could be provided by the model of Unified Science developed primarily by the Conference chairman, Edward Haskell, also president of the co-sponsoring body, the Council for Unified Research and Education, Inc.

### **Details of the Conference**

#### **Opening ceremony**

In the opening ceremony on November 19, Dr. Osami Kuboki, the president of the International Cultural Foundation, Japan, greeted the participants and said that the unity of the sciences was a most important theme as far as the scientists were concerned. He added that it is also the responsibility of present-day scientists to make efforts to resolve the problems that lie between science and human values.

Following Mr. Kuboki's statement, Dr. N. Yoshida, vice chairman of the executive committee and moderator of the opening ceremony, read congratulatory messages from several eminent scholars and public officials. Among' the messages received were the following:

*Dr. M. Wilkins*, Nobel Prize winner of Great Britain: Best wishes for your conference which one hopes will clarify the position of science in our culture and help to establish the value of science in relation to world problems today.

*Dr. W. Libby*, Nobel Prize winner of USA: I wish the conference the best success and I will read the proceedings with interest.

*Mr. P. E. Trudeau*, Prime Minister of Canada: ... I can think of no other tasks more urgent than that for which this Conference has been called... unless we achieve cooperation and communication among the scientists of our nations, unless our specialists are infused with a common ethical denominator based on compassion and knowledge, we will see that disintegration and fragmentation so prevalent in our modern world. May your deliberations generate that hope, courage and leadership so vital to us all.

Other distinguished names included: Dr. C. P. Snow, eminent author of Great Britain; Dr. A. Peccei, president of the Club of Rome, Italy; Dr. T.D. Lee and Dr. M. Delbruck, both Nobel Prize winners of USA.

In his remarks as the outgoing chairman, Mr. E. F. Haskell said that the Second Conference was three times as large as the first conference which was held in New York in November, 1972 indicating that the conditions which urgently required rational and efficient assembly of the sciences were maturing and that our confidence was growing, that we could fulfill these conditions in time, before disasters overwhelm us.

Next, the official opening address was delivered by the chairman of the executive committee, Dr. N. Sawada. Addressing the participants, he said that the task of all those who were gathered was to give equal place to knowledge of actuality and knowledge of the pertinent value systems, and to clarify the interrelations where they are of natural consequence. Continuing his address, he implied that as scholars they should pursue their studies into the unity of sciences in the form of an investigation into the unity of human knowledge, and that the unity of human knowledge must incorporate within it the unity of value consciousness and value systems. In closing, he repeated his belief that the participants had not assembled there to pursue exclusionary and separationist thoughts or to engage in self-assertion. Instead, Dr. Sawada expected self-reflection to be the tenor of the interexchange and that the scholars were there to undertake cooperative work in the name of understanding and unification.



*Dr. N. Sawada, chairman of ICUS executive committee, delivers opening address.*

### **Closing ceremony**

The closing ceremony was opened with "Modern Science and Man's View of Moral Values," an address delivered by the Reverend Sun Myung Moon, founder of the International Cultural Foundation, Inc. and initiator of this Conference. He conveyed his deepest admiration and gratitude to the eminent professors of the executive committee who rendered such painstaking efforts to hold the Conference and make it a success. Reverend Moon also expressed his profound respect and appreciation to this committee who decided to adopt the subject of "Modern Science and Moral Values" as the theme of the Conference. In reference to this theme, he offered his observations about a "cultural science" in which science would assume the unified character dealing also with the field of moral value.

In concluding his address Reverend Moon expressed his heartfelt wishes that the wonderful presentations of the research of the scholars and their discussions at this Conference will produce epoch-making results to contribute to the true peace and prosperity of mankind.

Dr. N. Yoshida, vice chairman of the executive committee delivering the closing address, thanked the members of the executive committee and the International Cultural Foundation for the successful completion of this Conference. He said that although there was no conclusion as to the possibility of the unity of the sciences, the free and successful exchange of views helped to understand the problems that

have amounted to the present day crisis.

Dr. Eccles speaking on behalf of the overseas visitors said that the support for this most remarkable Conference was most generous, while the organization was superb. He said that there had been papers which were most interesting and provocative and that everyone had learned much. They had enjoyed meeting with so many new friends and the renewed meetings with the old friends. There had also been incessant intellectual exchange not only at the conference but also at the extracurricular activities, at conversations and at discussions.

Dr. Eccles thanked the hosts most sincerely for all those days together, appreciating their sacrifice to communicate with the visitors in English, and concluded by wishing the International Cultural Foundation the best for the future.

A statement from the conference secretariat was delivered by Mr. Glenn Strait, the ICF representative from USA.

Among the academic exchange programs of the ICF, the Second International Conference on the Unity of the Sciences had been the most ambitious to date. In keeping with the concerns of the ICF, this Conference had sought to bring together scientists and scholars who were actively seeking to achieve a unity of the sciences at the same time that they were concerned with resolving the dilemma encapsulated by the Conference theme, "Modern Science and Moral Values." The ICF hoped that the success of this Conference could lead to more fruitful collaborations with the academic community in the future.

The statement continued that the ICF realized the need to reevaluate programs it had supported to determine a course of action most suited to achieve its desired ends, and that the contributions of the distinguished participants here, coming from their sincere concern, would be carefully considered in determining the course of action to be followed by the ICF, in preparing for the Third Conference. The statement concluded that the International Cultural Foundation is committed to the convening of a third successor conference at least equal in size to this Conference to be held in London, during November 1974.



*Facing camera, left to right: Dr. Andre F. Cournand, Nobel Laureate (U.S.); Dr. T.R. Gerholm (Sweden); Dr. John C. Eccles, Nobel Laureate (U.S.).*

### **Plenary sessions**

Dr. J. C. Eccles, distinguished professor of physiology and biophysics at the State University of New York and Nobel Prize winner in 1963, opened the first plenary session on November 19 with a presentation, "Culture: The Creation of Man and the Creator of Man." He developed the thesis that man has raised himself through culture by a kind of cross catalysis, and that everyone in his own lifetime has to recapitulate the whole sequence of cultural development of mankind, more or less. We start off with primitive behavior patterns, and one measure of civilization is the development of civilized behavior. Dr. Eccles explained that the brain is fully developed by genetic instructions, but all of culture has to be learned, which we can assume is by the growth of microstructural changes in synapses. Considering the conscious self, or ego, Dr. Eccles maintained that this is the personal uniqueness that each of us knows only for himself and that this uniqueness has come to each of us in our own lifetime, and is dependent upon the brain as a necessary but not a sufficient condition.

Dr. Eccles' paper concluded thus: "I have offered this in the hope that it may help man to discover a way out of his alienation and face up to the terrible and wonderful reality of his existence -- with courage and faith and hope.... Are we not participants in the meaning, where there is else no meaning? Do we not experience and delight in fellowship, joy, harmony, truth, love and beauty, where there else is only the mindless universe?" The final day of the Conference, November 21, featured the remaining plenary sessions. The opening address, delivered by Dr. A. F. Cournand, professor emeritus of medicine at the College of Physicians and Surgeons, Columbia University and Nobel Prize winner in 1956, was "The

Significance and Future of the Scientists' Code." He mentioned that this code, comprising intellectual objectivity and intensity, tolerance, recognition of error, doubt of certitude, unselfish engagement, and the sense of belonging, has influenced the efforts of scientists in diverse fields and is complementary to the scientific ethos. In addition to helping to make possible knowledge of nature, Dr. Cournand said that the code enables dialogue among proponents " { incompatible spiritual and political values. He concluded that the scientists' code generalized to incorporate an ethic of development, might be emphasized in education, as well as in the codes of conduct underlying technology and political affairs.

Dr. F. A. Long, Henry Luce professor of science and society at Cornell University, explained in his contribution that since science and technology represent to the less developed countries a resource of great significance, policies for the support of science and the utilization of technology must, in the end, be generated by the countries themselves. However, with the acquisition of effective planning and policy-making bodies and, not least, of a corps of able and knowledgeable scientists and engineers, the world's resources of science and technology become in principle, available. Dr. Long added that at this point, it becomes possible to envisage a number of types of international collaboration for the more effective utilization of science and technology. The developed nations of the world have an important obligation to support and participate in these collaborative efforts.

The other addresses were "The Science of Behavior and the Internal Universe" by Dr. W.H. Gantt, senior scientist, Pavlovian Lab., Perry Point Maryland; and "Antiscience Expressed by a Professional Scientist: A Non-European Viewpoint" by Dr. Sibatani of Australia.

### **Committee sessions**

The committee sessions, held during the afternoon of November 19 as well as all day on November 20, produced some valuable contributions and stimulating discussions which were seldom completed in the short time allowed for discussion.

### **Committee I**

Among the notable papers presented in Committee I were the following: Dr. G.S. Stent, professor of molecular biology, University of California, in his paper "The Dilemma of Science and Morals," pointed out that the conflicts between science and morals which still continue to arise despite the hegemony of atheistic scientism over traditional Judeo-Christianity in the 20th century reflect a basic contradiction in the metaphysical foundation of Western ethics. Thus contradiction arises from the simultaneous belief in both objectively valid moral truths and purely relative values of communal purpose.

Dr. Stanley Jaki, professor of physics at Seton Hall University, USA, noted cosmologist and winner of the Lecomte du Nouy Prize and Medal in 1970, presented a paper entitled "Modern Science and Moral Values -- Some Lessons of the History of Science," in which he suggested that a satisfactory answer to the present day problem of a correct relation of modern science and moral values cannot be given without facing the issue of defining man and without recognizing the crucial difference between goals and tools, and between knowing and doing what is proper and good.

Dr. Se Won Yoon, professor of physics, Kyung Hee University, Korea, in his paper, "The Meaning of Science in Oriental Mind," traced the development of the Oriental view of science, based on Taoist thought, then introduced the 2,000- year-old idea of universe by Motze, which is seen to be based on a surprisingly well-defined logic of nature.

Dr. Ervin Laszlo, professor of philosophy at the State University of New York, in his paper "The Role of General Systems Theory in the Conceptual Synthesis of the Coming Age," outlined that today, general systems theory has moved beyond the arena of theoretical controversy into the field of practical decision-making. Operational systems models as diverse as models of urban, military, health, energy, and political systems have emerged in profusion. Dr. Laszlo added that the discerning of their mutual relevance called for a general map, which is offered by the theory of invariant systematic organization crossing multiple levels in hierarchic sequences. The body of concepts produced by general systems theorists can furnish the core of a conceptual synthesis of the coming age, a core which conserves scientific precision, and combines it with the wide vistas of relationships needed to relate the basic facts of systematic existence to the high reaches of the human intellect.

Dr. A.C. Crombie, professor of history of science, Oxford University, presented a paper entitled, "The European Experience of Nature," in which he looked at the relation of natural science to moral beliefs from the point of view of comparative history, or a kind of intellectual anthropology. Other participants in Committee I included: Dr. Y. Bar-Hillel, professor of logic and philosophy of science, Hebrew University; Dr. W.F. Buckley, professor of sociology, University of New Hampshire; Dr. T. Fujimoto, professor of philosophy, Hokkaido University; Dr. T.R. Gerholm, associate professor of physics, University of Stockholm; and Dr. J. Hintikka, professor of philosophy, University of Helsinki and Stanford University.

### **Committee II**

The Committee II sessions included presentations and discussions emanating from a more pragmatic viewpoint. Although there were exceptions, the majority of papers dealt with practical problems

encompassed within the collective term "Science and Technology" in relation to people, values, and society.

Dr. O.R. Anderson, professor of natural sciences at Teacher's College, Columbia University, explained and compared with traditional models a new "Anthropocentric View of Science Teaching," which interprets science from a cognitive psychological perspective that embraces both the concept of science as inquiry and as a human enterprise that makes it amenable to moral analysis.

Dr. L. Rosenmayr, professor of sociology at the University of Vienna, presented "Ideology and Science: Sociological Perspectives," in which he urged that scientific reasoning, being different from ideological reasoning, should go beyond defensive and aggressive explanatory mechanisms. Although no area of personal or public, social or cultural life should in principle be excluded from scientific study, other forms of perception and knowledge than scientific ones should be accepted and valued and not denounced by scientists and by a civilization strongly built on scientific development.

He concluded by pointing out that the scientific civilization will not be able to completely avoid ideology and that it should, however, be the role of science to criticize the structure and to reduce the cognitive and political power of ideology.

Dr. G. Masini, president of the Italian scientific journalists, in his paper, "Crisis of Science (or of Scientism) in Modern Culture and Society?" pointed out that whereas the logical extension of the positivistic world-view had previously led much of the public to imagine that science could solve all the problems of humanity, the growing realization that science has been unable to solve many human problems now leads these same people to consider that science is in crisis. Both views result from an erroneous and dangerous "Scientism;" and may be counteracted by the popularization of science, and by conscious efforts to return toward the unity of knowledge typified by the Florentine renaissance.

Dr. H. Wold, professor of statistics at Goteborg University, explored in his paper the global-wide transition of schools and universities from elitist to mass establishments. He added that the Conference program for the unity of the sciences is highly relevant and he wished to emphasize the need for more interdisciplinary research.

Dr. K. Atsumi, professor of medicine, Tokyo University, in his paper, "The Future of the Life Sciences and Moral Values," pointed out that if we were to ask the human race, which bears the burden of a tiered system of values that exist in the context of the natural environment, to systematize its values and attain a state of harmony, we must inevitably extend our inquiry into the problem of solidarity of human beings and the most fundamental of life's questions: "What is the goal of humanity, the meaning of existence, and the destiny of man?" Among the other contributions were the following: "Transexperiential Inquiry" by Dr. E. Jantsch, visiting professor at the Technological University of Denmark; "Scientific Aid to Value Judgment" by Dr. Y. Dror, professor of political science, Hebrew University; "An Academic Research in Old Korea" by Dr. S.T. Choh, professor of physics, Sogong University; and "Science and Technology and Society" by Mr. G. Strasser, president, Strasser Associates, Inc.

### **Commemorative events**

The commemorative events were held on two evenings in order that the public might also share the benefits from this Conference. On the evening of November 19, guest speaker Mr. G. Rattray Taylor, a noted author and commentator from Great Britain, addressed some 500 persons gathered at the Tokyo Prince Hotel on the subject, "Has Man a Future?" On the following evening, November 20, Mr. J. Coates from the Office of Exploratory Research at the U.S. National Science Foundation, spoke to some 200 persons gathered at the Tokyo Hilton Hotel on the theme, "Technology and the Future Society."

Musical entertainment during the second half of each program consisted of traditional Japanese music and dance on November 19 and classical Western music on November 20.

### **Reception and party**

On the evening of November 18, all the participants were warmly received as the reception hosted by Dr. Kuboki, president of the ICF in Japan. The farewell party was also hosted by Mr. Kuboki on the evening of November 21. On both occasions, dozens of prominent people from the diplomatic, academic, economic, and political circles in Japan joined this gathering to greet to the participating scholars as well as the host.

### **Extracurricular activities -- discussion of the Third Conference**

While both the executive committee and the Conference secretariat concentrated upon ensuring the success of this Second Conference, the ICF in addition arranged several informal meetings to consider the possibilities for a third successor Conference to be held in London, which would build upon the fruitful results of this Conference.

Before the Conference, ICF had the intention of establishing at the Conference, a permanent world association of scientists and scholars, to be responsible for conveying the third and the following conferences. At a preliminary discussion meeting, attended by Drs. Anderson, Cournand, Eccles, and

Wold, and the ICF representatives from Great Britain and the USA, it became apparent that although there was generally strong support for maintaining the continuity of the conferences, there were divergent opinions about the proper course to ensure continuity some favored the official establishment during the Conference of a world association to coordinate future planning, whereas others urged a more moderate course beginning with the forming of an informal committee.

In succeeding discussions, which included a luncheon and a breakfast meeting with 38 and 22 participants respectively, points of view were found to cluster about certain main themes.

Central points may be grouped into three *dichotomies*, which may be shown diagrammatically as follows:

#### Procedural

- Prompt establishment of world association, or
- Gradual progress toward some organized Body

#### Conceptual

- Philosophical (either unity of the sciences or science and values)
- Applied

Although these dichotomies of focus did arise, the participants seemed to be nearly unanimous in their thinking that the points of difference should not be allowed to prevent them from seeking to find points of common focus which could well serve as the basis for future collaboration.

As the ICF secretariat observed the keen interest and eager participation in these "extracurricular" meetings, it realized more deeply the great potential of such a conference as this, yet, at the same time, the various dichotomies of focus made it all too clear that hasty establishment of the intended world association would likely result in an organization immobilized by lack of a strong central focus among the members. Thus the emphasis was shifted toward a consideration of the theme and organization of the third Conference instead of toward a world association.

A few representative comments are the following:

#### **Luncheon Meeting**

Dr. A. F. Cournand, while clarifying the need to have a clear goal, emphasized the importance of the unification of science in the service of man and society. He added that there must be continuity in whatever we undertake to accomplish.

Dr. Eccles, while cautioning against premature crystallization of patterns, championed the unification of science and values.

#### **Breakfast Meeting**

Dr. Anderson, as chairman, suggested a trial theme, "Science, Values, and the Future of Man," which included the philosophical, idealistic, as well as practical aspects (policymaking and technological decisions which must go along with the ideals that man generates).

Dr. Wold said that although the International Cultural Foundation looks to the scientists to help, the scientists themselves cannot act because they are not a community.

This necessitated two steps: collaboration and more interdisciplinary work. Dr. Anderson said in support of Dr. Wold that scientists do not have a cohesive identity and that they need to have identification with a broader community.

Dr. Gerholm remarked that since there was some concern about the future of science, what he liked about this conference was that the sponsoring organization (ICF) was one of the few organizations he had found in recent times coming to the support of science.

Dr. Rattray Taylor suggested that if we wanted to effect change, more psychologists, anthropologists, and people who know communication ought to be invited to the next conference, to which Mr. Strasser added that we must act with what we have and yet at the same time refine our intellectual foundations.

Dr. Laszlo suggested the aspect of organizing themes to refine our ideas and the aspect of organizing people to establish working groups in order to effect change. He added that once we know what we wanted to do and with whom we wanted to do it, then we can start doing things -- as long as we are assured of support, like the International Cultural Foundation has given.

Dr. Masini called for a program which would promote a popularization of science and culture. Dr. Rosenmayr said that it would be advisable to adhere to a specific work program and pointed out that

participants at future conferences ought to involve younger members.

Preliminary conclusions of the ICF in response to these discussions were delivered before the full conference body at the closing ceremony November 21. (See "Closing ceremony.")

### **Conclusion and evaluation**

From an objective point of view, the Second International Conference on the Unity of the Sciences was unique in at least four ways: 1) It considered the moral implications of the unity of the sciences from the theoretical and practical viewpoints. 2) It convened an international conference composed of scientists and scholars from widely diverse academic and ethnic backgrounds. 3) It was organized within a period of one year, through the international collaboration of the organizing executive body and the managing secretariat which was provided by ICF, Inc. 4) Most of the participants shared a high spirit of cooperation which sought to transcend their specialized disciplines.

In response to this unusual confluence of circumstances, the participants, by their own evaluation, were generally agreed that this conference was both intellectually rewarding and personally satisfying.

In particular they were impressed with the consideration and helpfulness of the organizers and with the intellectual content of the academic program. Several felt a heightened sense of the responsibility of the scientist and also felt a greater hope for the future as they came to realize the similarity of thought in their colleagues, and the commitment of ICF to provide further support. From the point of view of the International Cultural Foundation, this Conference was a successful demonstration of the fact that many academicians are today seeking an outlet from their moral concerns into some channel that holds promise to produce fruitful results.

Whether their emphasis was upon seeking a new synthesis of the sciences, or upon the dilemma of facts and values, or upon the affects of science and technology on society, these scientists and scholars proved that a unity of scientists can be achieved.

This unity of *scientists* then could generate greater hope for achieving a socially relevant unity of the *sciences* or for progress toward the resolution of the facts and values dilemma. At this Conference, ICF was able to provide the inputs of basic support and loving service to a group of scientists and scholars sharing a concern for moral issues. These elements seem essential to the achieving of an enduring unity of scientists which in itself seems to be a prerequisite for any substantial progress. ICF is committed to providing these elements for succeeding conferences.

In addition, however, the participants have pointed out that although this Conference was of great benefit to each of them, the next conference should take care to proceed beyond what was achieved at this Conference.

Taking this advice into consideration, the ICF, from its limited resources, wishes to achieve the highest possible academic standards at the Third Conference. In particular, a unity of scientists which starts with a foundation of the most eminent scientists and scholars, can best influence public opinion in a short time. Based upon such a foundation, cooperative efforts can then be expanded to include many scientists and scholars.

The Third International Conference on the Unity of the Sciences will be organized by a committee of British scholars and will convene in London in late 1974. Parallel to the Conference organizational work will be the planning by an advisory committee to consider the establishment at the Third Conference a world association of scientists and scholars who would be responsible for the long-term course of the International Conference on the Unity of the Sciences.