# International Federation For Systems Research NEWSLETTER

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CORRIGENDA: will readers kindly correct the numbering of the preceding issue to read correctly Nos. 7 and 8.

## IFSR'S NEW PRESIDENT Professor Dr. Robert Trappl

has been President of the Austrian Society for Cybernetic Studies since its inception in 1970. A member of the Medical School of the Vienna University, he has been Director of the Department of Medical Cybernetics since its establishment in 1977. His present interests lie in the field of Artificial Intelligence and the title of the department now includes AI. A record of the conclusions arrived at by a group of scientists invited to a workshop on impacts of AI (organized jointly by the Austrian Society for Cybernetic Studies and the International Institute for Applied Systems Analysis in Laxenburg) some months ago will be available shortly.

Prof. Trappl has also chaired the seven European Meetings on Cybernetics and Systems Research held in Vienna since 1972. He is author of some 80 scientific papers and coauthor/editor of 14 books.

We hope to publish a policy statement by the new President in our next issue.



# **OUTGOING IFSR PRESIDENT'S REPORT**

It was a unique and exciting opportunity for me to serve as the IFSR President during the initial period of four years. Now, at the end of my tenure, it is a proper time to reflect upon the IFSR state of affairs.

IFSR was legally established in April 10, 1980, when a treaty between the Austrian Government and IFSR was signed at an official ceremony in Vienna by Dr. Herta Firnberg, the Austrian then Federal Minister for Science and Research, and myself, as the IFSR President. According to the treaty, IFSR became committed to a domicile in Austria, while the Austrian Government committed itself to provide IFSR with office space and financial support. The IFSR aims are "to stimulate all activities at the international level."

The following is a list of major IFSR accomplishments during its initial period of four years (April 1980—April 1984), which coincides with my tenure as the IFSR President:

1. In fall 1981, IFSR started a publication of its *Newsetter*. Its primary purpose is to exchange relevant information among the IFSR member societies and report on IFSR activities. It is published three times a year under the experienced editorship of Paul Hanika. 2. In 1982, IFSR sponsored the *International Conference on Systems Methodology* (Washington, D.C., January 5–9, 1982). It is remembered as a successful conference with broad international representation.

3. IFSR initiated a prestigious lecture series to honor the memory of one of the pioneers of systems research and cybernetics, W. Ross Ashby (1903—1972); it is referred to as the *W. Ross Ashby Memorial Lecture Series.* The first lecture in this series was given by Heinz von Foerster at the mentioned conference in Washington<sup>1</sup>; the second lecture was delivered by Robert Rosen at the Seventh European Meeting on Systems Research and Cybernetics in Vienna in April 1984<sup>2</sup>.

4. In summer 1982, IFSR opened its *office* in Laxenburg, Austria, across the street from the International Institute for Applied Systems Analysis. The address is: IFSR, Hofstrasse 1, A-2361 Laxenburg, Austria.

5. In April 1984, the first issue of an official IFSR journal was published. The journal, which has the name "Systems Research", is published quarterly by Pergamon Press in Oxford under the fine editorship of John War-

## POINTS FROM THE IFSR BOARD MEETING APRIL 1984

## **Election of the New Executive Committee**

By secret ballot the following new executive committee was elected:

President: R. Trappl,

Vice-President: B. Banathy,

Secretary-Treasurer: G. de Zeeuw.

Session I of this Board Meeting was chaired by Prof. George Klir as acting President and Session II by the new President Prof. R. Trappl.

## **IFSR Book Series**

Prof. Trappl proposed Prof. Klir as editor of this new Book-Series to be published by Pergamon Press in cooperation with IFSR. Prof. Klir will try to insure that these books are marketed at the lowest possible price.

## **Affiliate Members**

A list of these will be published when formalities have been completed.

## **Membership Discussions**

At this stage of the Board Meeting a number of distinguished scientists who had been invited to attend, were informed by the IFSR President Prof. R. Trappl about the conditions attached to full membership and affiliate membership respectively with a view to their countries' joining the Federation.

These included the following who all made their recommendations as to institutions and persons that should be approached in this matter:

**Argentinia:** Charles François, President of GESI, Asociació Argentina de Teorîa General de Sistemas y de Cibernética, Buenos Aires

Bulgaria: Dr. Cecharov, Sofia

**Denmark:** Professor Kjell Sellin, University of Kopenhagen, Copenhague

Hungary: Dr. Istvan Kiss, Hungarian Academy of Sciences, Budapest, presently IIASA, Laxenburg

India: Professor Amitava Ghosal, Council of Scientific and Industrial Research, Editor of SCIMA, New Delhi

Italy: Professor Luigi Ricciardi, Università di Napoli, Napoli

**Mexico:** Professor J. L. Elohim, President of the Mexican Association of Systems and Cybernetics, Mexico

**Poland:** Professor Wojciech Gasparski, Polish Academy of Sciences, Warsaw

Romania: Professor Edmond Nicolau, Polytechnic Institute of Bucharest, Bucharest

**Spain:** Professor Dr. Raffael Rodrigez Delgado, President of the Spanish Society for General Research

**UdSSR:** Professor Dr. Vadim Sadovsky, Soviet Academy of Sciences, Moskow

**Venezuela:** Dr. Giorgio Tonella, Society for the Advancement of Sciences, University of the Andes, Merida.

## Relationship between IFSR and the International Systems Institute

IFSR accepts ISI as the organization for research of systems education.

It is agreed upon that:

- The IFSR provides ISI (and vice versa) with information, this information will be forwarded;
- IFSR supports ISI in collecting information about systems education;
- The IFSR will provide guidance to conduct research projects;
- This contract will be reviewed biennially.

## SGSR 1985 Meeting

The next SGSR Meeting 1985 in Washington D. C. will be sponsored by IFSR.

## IFSR "Best Paper Award"

Prof. R. Trappl suggested the IFSR-Award. It should be:

- an annual award,
- of 10.000 AS
- first given in 1985,
- its full name is: IFSR-Award for the Best Paper in Systems Science,
- the most outstanding article in Systems Science should be rewarded,
- the articles should be submitted to the IFSR,
- the IFSR-Board which serves as nominating committee nominates the "winner",
- editors of journals and chairmen of member organizations are invited to participate,
- the selection committee will be decided by the IFSR-Board;
- the Award should be presented in the country from which the winner comes;

Prof. G. de Zeeuw is commissioned to work out the regulations. These will be published after IFSR Executive Committee's approval.

In closing the Meeting Prof. Trappl thanked Prof. Klir for his four years activity on behalf of IFSR.

Prof. Trappl further suggested that the editors of IFSR publications should be kept informed about the IFSR activities and that they should be invited to attend the Board Meetings at their own expenses (unanimously agreed).

## OFFICIAL OPENING OF THE 7th EUROPEAN MEETING ON CYBERNETICS AND SYSTEMS RESEARCH IN VIENNA, APRIL 24–27, 1984

The Opening was performed by Dr. Norbert Rozsenich, Chief of Section of the Research Section of the Federal Ministry for Science and Research.

Mr. Chairman, Distinguished participants and guests of the Conference, Ladies and Gentlemen,

The Federal Minister of Science and Research, his Excellency Dr. Heinz Fischer regrets deeply not being able to welcome personally the contributors and participants

## OUTGOING IFSR PRESIDENT'S REPORT

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field. A special arrangement was reached with the publisher according to which a sufficient number of copies of the journal is made available to individual members of the IFSR member societies for a price that does not exceed production costs and postage. This arrangement makes the journal easily accessible to individual researchers. For example, the Society for General Systems Research, one of the IFSR members, provides each of its individual members with a copy of the journal; the small cost involved is covered by the membership fee. An interesting feature of the journal is that each volume will contain a special issue devoted to the role of systems research in dealing with problems germane to computer technology. These special issues will be supported by the Burroughs Corporation and will have a wider circulation

6. As part of a broader publication program with Pergamon Press, IFSR has also initiated a *book series* this year. The first volume in this series, "*Anticipatory Systems: Philosophical, Mathematical and Methodological Foundations*" by Robert Rosen, is now in production.

✓ 7. Since spring 1984, IFSR has been in charge of the General Systems Depository. This service was initiated at the State University of New York at Binghamton in 1974. Until this year, it had been associated with the International Journal of General Systems, where abstracts of items placed into the Depository (reports, data collections, video tapes, etc.) were published<sup>3</sup>. The whole Depository was transfered to the IFSR office in Austria earlier this year. Abstracts of new items will be published from now on in the IFSR Newsletter and all transactions will be made through the IFSR office.

8. In addition to the Depository, IFSR also started to coordinate internationally various *bibliographical activities* in the field of systems research, as an important service to the professional community. This will result in periodical publishing of bibliographies in this field. In fact, this service is a direct continuation of a bibliography of general systems literature in the period 1945—1976, which was published by SUNY-Binghamton in 1977<sup>4</sup>. The first bibliography prepared under the IFSR auspices is now available<sup>5</sup> and we hope to engage Pergamon Press *y* its distribution.

In addition to these explicit accomplishments, the four year existence of IFSR has already shown a favorable influence in strengthening systems research groups

of the Seventh European Meeting on Cybernetics and Systems Research. He is at present visiting the People's Republic of China and has authorized me to represent him at this opening ceremony. As some of You might know, Minister Fischer appreciates very much the efforts of the Austrian Society for Cybernetic Studies in organizing these European Meetings. Initiated in 1972, this special type of conference on several topics of Cybernetics and Systems Research has grown to one of the leading

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in various countries. This influence will undoubtedly become even more pronounced in the years ahead.

With a new Board (formed in April 1984) and some new member societies, IFSR is now entering the second stage of its development. It is very fortunate that Robert Trappl became the second IFSR President. There is no one who has done more for IFSR than he. I wish him the very best.

As far as I am concerned, my service to IFSR will not completely terminate. I will continue to serve as Editor of the mentioned IFSR Book Series, as member of the Editorial Board of Systems Research, and in any other function that might be desired.

Let me end this report by extending my best wishes for a successful future of IFSR as well as the whole systems research movement.

George J. Klir Outgoing IFSR President

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Dr. Hertha Firnberg then Austrian Federal Minister for Science and Research and Dr. George Klir signing the IFSR Agreement.

conferences in Systems Sciences all over the world and I have been told on several occasions, that many scientists feel these meetings are really unique in Europe.

As I learnt from the program this meeting again will be an excellent occassion to hear the most stimulating presentations and to meet some of the best people worldwide involved in this fascinating research area.

In this context, the Austrian hosts of this conference can be proud of the fact, that one of the pioneers of modern systems theory, Ludwig von Bertalanffy, was born near Vienna in 1901 and graduated in Vienna in 1926. I am not quite sure, that all of You are familiar with the fact, that Ludwig von Bertalanffy also held lectures at the University of Vienna from 1934 to 1938. Nevertheless more than 30 years passed, until the first university department for systems theory in Austria was officially founded in 1972 at the University of Linz.

Since the early seventies Austria has another important relation to cybernetics and systems research by hosting several international scientific corporations which are active in this research area.

In 1972 the International Institute for Applied Systems Analysis established its headquarters in Laxenburg, near Vienna and has grown since then to a world-renowned scientific institution with scientists and scholars coming from approximately 20 different countries.

At the end of the seventies the International Federation for Automatic Control and the International Federation for Systems Research also accepted the invitation of the Austrian government to move their headquarters to Austria.

By the way, I was very pleased to hear, that a good friend of mine, the chairman of this meeting, Prof. Trappl has been elected yesterday President of the Internatio-

nal Federation for Systems Research and I wish him all the best for the future acitivities of this comparatively young international organization. Let me finally mention another contribution of the Austrian government, that can be seen in close connection to one of your topics of the meeting's agenda: The Austrian government very recently decided to implement a special program of promoting the application of advanced microelectronics and information technologies in the Austrian economy with special regard to small and medium enterprises. One of the 12 core areas of this program is Artificial Intelligence and it is hoped that the Austrian Society for Cybernetic Studies will play a leading role in applying the most sophisticated tools of Al according to the sober requirements of the Austrian economy. I know, this is a complicated process of know-how-transformation from theory to practice but to some extent I have formed the impression, that the Systems Sciences worldwide begin to emerge following many years of fruitful basic research and building conceptual frameworks as a set of practical and powerful tools, together they can help counter one of the most interactable challenges of the world at present; the core of this challenge is complexity.

I am confident, that this meeting will find some answers to this question. As a conclusion of my short address, I wish to thank those ladies and gentlemen, who were in charge of planning, preparing and organizing this conference. It is a special pleasure for me, to welcome the numerous distinguished speakers from abroad and I wish all the participants a successful meeting. On behalf of the Federal Minister for Science and Research I herewith open the "Seventh European Meeting on Cybernetics and Systems Research".

## ASCS MEMBER DR. ROZSENICH APPOINTED "SEKTIONSLEITER" (Chief of Section) IN THE AUSTRIAN FEDERAL MINISTRY FOR SCIENCE AND RESEARCH

Oberrat Dr. Norbert Rozsenich, head of the department of information processing of the Austrian Federal Ministry of Science and Research, has been appointed "Sektionsleiter" (chief of section) of the Research Section of the Ministry.

The Austrian Federal Ministry of Science and Research is divided into four sections (Presidium, Universities, Research, Museums), so Dr. Rozsenich is one of the four highest ranking officers of the Ministry and reports directly to the Federal Minister.

Dr. Rozsenich is, since many years, a member of the Board of the Austrian Society for Cybernetic Studies. It was his initiative and his strong personal involvement which led to the invitation of the Austrian Government to the International Federation for Systems Research to take its official seat in Austria.

The IFSR is extremely happy and proud that its "old friend" was appointed to such a responsible position and it wishes him all success for his future activities. The Federation looks forward to a close cooperation with Sektionsleiter Dr. Rozsenich and it offers him all possible help which he might ask for.

> Robert Trappl President, IFSR

## PLANNED COOPERATION BETWEEN AUSTRIA/MEXICO IN SYSTEMS RESEARCH

Between the University of Linz, Faculty for Engineering and Science and the Instituto Politechnico Nacional, School of Electrical and Mechanical Engineering, a first step toward the establishment of a stronger cooperation in systems research has been accomplished. Following the visit of Prof. Franz Pichler in Mexico in January/February 1984, Prof. Elohim J.L. came to Austria to chair a workshop on "Systems and Cybernetics for the Progress of Developing Countries" at the EMCSR 1984 in Vienna, organized by the Austrian Society for Cybernetic Studies last April. This workshop was followed by a visit of Prof. Elohim at the University of Linz; both Prof. Elohim and Prof. Pichler then attended the Fuschl Meeting end of April 1984.

We reproduce on page 7 and 8 Prof. Elohim's contribution to this meeting.

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# **9th WORLD CONGRESS OF IFAC**

Budapest, Hungary 2-6 July 1984

1.200 experts from 42 states participated in this triennual event. More than half of them took an active part in 10 colloquia, 11 sessions dealing particularly with the practical problems of industry, as well as 27 platform discussions.

Hungary, the host country, nominated 200 participants; the next largest contingent (116) hailed from Japan, followed by USA (104), Federal Republic of Germany (70).

IIASA Laxenburg had sent four of its scientific staff, the rest of Austria contributing a further 12 members to the conference. Two of these 12 (17 %) were industrially oriented; consulting and sponsored research in industrial applications accounted for more substantial numbers from other countries (Switzerland 33 %, USA 34 %, Japan 35 %, Sweden 43 %, Federal Republic of Germany 45 %).

The Hungary Prime Minister accompanied by the Lord Major of Budapest opened the conference. The technical program comprised 10 principal sub-divisions:

- Power stations and systems, control for the utilization of energy and materials;
- Traffic control, biomedical control, computers, components and instruments;
- Space applications, industrial systems engineering, industrial process control;
- Developing countries, international stability, environmental control, education, water resources, energy systems;
- Mathematical systems theory, singular perturbations, team and game theory, decision support techniques;
- Social effects of automation, manufacturing technology, man-machine systems;
- Adaptive and stochastic control;
- Analysis and structural properties, CAD of control systems;
  - MORE ABOUT THE "FUSCHL CONVERSATIONS" AND THE ISI (INTERNATIONAL SYSTEMS INSTITUTE)

We are indepted to Dr. Bela Banathy for a twelve page report summarizing past activities and future programs of this group.

Starting with a meeting in April 1982 at Fuschl (Austria) when thirty invited scientists discussed "the relevance of education in systems thinking to the development of global awareness and consciousness" the development has since gone from strength to strength.

The theme was further developed by members of this initial "Fuschl Group" and interested colleagues in the meeting held in London (Fall 1982), Detroit (Spring 1983), and again at the Fuschl Lake in Spring 1984.

Since then the first Mediterranean Regional Conversation was held in May 1984 at the Marathon Beach in Greece, with 35 participants attending from Greece, Italy, Spain and Portugal and three representatives of the Fuschl groups who provided technical assistance. Other Regional Conversations are planned in Spain (October 1984), in Finland (June 1985), in Costa Rica (Fall 1985), in Australia (Spring 1986), with a third Fuschl event scheduled for April 1986.

We hope to find space for the highlights recorded in the detailed reports on this continuing series of interesting and important events.

- Synthesis of control, applications of nonlinear programming;
- Identification, theory and methodology of large scale systems.

Counting the sessions concerned with industry, 11 simultaneous events throughout the period of the conference make it impossible to present a complete picture here. The interested reader should therefore consult the 11 volumes of printed particulars made available to conference participants.

The leading spirits and personalities in the IFAC organized have long felt growing concern about the difficulties encountered in turning theoretical findings and insights into practical tools for industry. It was for this reason that this conference organized 11 sessions devoting attention to this problem. All together 200 people shared in these discussions. Specific themes included:

- Control and management of the business process;
- Modelling of chemical processes;
- Managing plants under control systems with complicated data;
- Man-machine communications;
- How to integrate human factors in automation projects?
- Production management of small orders in steel mills;
- Mill-wide control in the paper and pulp industry;
- Electric power generation and transmission;
- Will it be possible to limit trafic congestion?
- Robotics and discrete manufacturing;
- Concluding session, summing up, recommendations. At the conclusion of the conference Prof. Dr. Vamos (member of the Hungarian Academy of Sciences) han-

ded over the Presidency of IFAC to Prof. Dr. Thoma. The new President (University of Hannover) is also a member of the Advisory Council of VDI/\/DE Gesellschaft Messund Regeltechnik.

The 10th World Congress is scheduled for 27—31 July 1987 at Munich.

## SOCIETY FOR GENERAL SYSTEMS RESEARCH

1985 Annual Meeting Los Angeles, CA May 27—31, 1985

## **GENERAL OUTLINE**

The program of the 1985 meeting embraces the entire scope of systems inquiring by which:

- a) systems theory is defined and formulated through its continuous evolution;
- b) systems philosophy is explicated and evolved; and
- c) systems methodology is pursued as a field of study as well as implemented in a variety of contexts and through a variety of strategies, methods, and tools that apply systems theory and philosophy.

The program is arranged and organized into eight program areas, based on the definitional scheme explained above.

The 1985 meeting has a special theme: to define and characterize competencies. Papers which do not address the competence theme are also invited and will be incorporated in the program.

Interested readers are advised to write to the SGSR for a copy of this four page document.

## PROGRAM DEVELOPMENT SCHEDULE

October 15: Abstracts for papers and symposium proposals should be received by program area chairs. November 30: Program chairs accept abstracta and

symposium proposals and notify authors.

January 15: Drafts of papers/symposium contributions should be received by program chairs.

February 15: Program area chairs notify authors and the SGSR Office (Louisville) on acceptance of drafts. The Louisville office will mail out forms by the 20th of February to authors for preparing camera-ready copies.

March 30: Camera-ready copies of papers and symposium contributions should be received at the office of Bela Banathy.

#### SYSTEMS THEORY

Abstracts and drafts for the general paper sessions in the systems theory area should be sent to: Len Troncale, Visiting Scholar, International Institute for Applied Systems Analysis (IIASA), A-2361 Laxenburg, Austria. Papers submitted individually will be grouped into related categories. Individuals may also submit proposals for entire sessions if they are willing to serve as chair of the proposed session with its concomitant communication and review obligations, if they are willing to guarantee the papers will follow the above requirements, and if they already have the titles and confirmations of at least three contributions.

## SYSTEMS METHODOLOGY

Symposia in this program area will be organized by George Klir, Department of Systems Sciences, Thomas

J. Watson, School of Engineering, Applied Science, and Technology, State University of New York, Binghamton, New York, 13901.

Proposals for paper sessions and abstracts of papers should be sent to Samit Chakraborty, Director of Business Planning, Department 505, Northern Telecon International Limited, Box 458 Station A, Mississauge, Ontario, Canada L5A3A2.

#### SYSTEMS PHILOSOPHY

Please send your ideas, abstracts, and proposals to Jeffery Stamps, The Networking Institute, P.O. Box 66, West Newton, MA 02165. Archie Bahm and Bill Reckmeyer will work with Jeff in coordinating the program area.

## **GENERAL CONTRIBUTION**

Contributions that do not address the special theme of competence in systems inquiry are also invited and will be organized in the form of paper sessions and workshops. Program proposals, session plans, and abstracts and drafts of papers should be sent — as described under "Program Development Schedule" — to Frank M. Leonard, 10270 Wilde Lake Terrace, Columbia, Maryland 21044. Frank wil work with a program committee in this general area.

#### **CLOSING NOTE**

Your contributions to an assistance with the 1985 meeting are invited. General ideas for program design and development should be sent directly to: Bela H. Banathy President, SGSR and Chair of the 1985 Meeting Far West Laboratory for Educational Research and Development 1855 Folsom Street San Francisco, CA 94103

# **REPORT FROM THE DUTCH SYSTEMS GROUP**

In April 1985 for the fourth time a meeting be called to discuss Problems of ... interesting topics, part of a biannual program, sandwiched with the EMCSR. The aim is to provide a forum for exploring new research questions and programs. In 1979 Problems of Context were focused upon, in 1981 Problems of Levels and Boundaries; in 1983 Problems of Actors and Actions. In 1985 the topic will be Problems of Disappearing Knowledge. The choice is based on the observation of a relatively "hot" phenomenon: results of inquiry often do not lead to positive effects, and their use sometimes even seems to be deliberately avoided. This presumably is partly due to lack of dissemination (dusty cupboard phenomenon). Partly one finds that many "hard" and "pure" results turn out not to be so hard as soon as they are used in practical problem solving; they disintegrate. It is the latter phenomenon that is focus of the meeting in 1985, not the lack of dissemination. How can it happen that so much disappears, especially in the social sciences? Is this a defect of pure research, or of the organisation of the practical world? Is it effect of the systemic character of our environment? How to prevent such disappearances (costly in terms of money, time, practical failures)? Research suggestions to answer these and similar questions are solicited, as well as attempts for theoretical understanding. Inquiries can be directed towards Gerard de Zeeuw. Within a few weeks information folders will be mailed to those on the Dutch Systems' Group mailing list. If you are

interested, put yourself on it.

In August 1984 in Dutch Systems Group has organized its annual Summer Course, this time in cooperation with the Dutch Group for Artificial Intelligence. The topic for 1984 is "Intelligence support systems". Lectures are programmed, first to delineate what is meant by such systems: consultation systems, decision support systems, etc. Next to provide a sound theoretical basis and an overview of applications in areas like education, business management, governmental programs. Finally time will be spent on ongoing and future efforts to inquire on the processes of computer use and their social effects. How to prevent people from thinking and acting as if the only condition to sensible and intelligent forms of computer usage is to teach programming? How to help users better to control their intelligent supports in order to become more effective in their actions? How to close the so-called technological gap?

Cooperation in the summer course between systems and a.i. researchers seems highly opportune. The first can contribute their expertise on systems design and boundary control to implement new systems features. The second their expertise on connecting what may be called local intelligence to global intelligence — or on combining intelligence in the activities of specific systems into intelligence in the activities of combined systems.

The Dutch Universities are at the moment in a difficult

process of change. First there is a reorganisation aimed at reducing the length of the University program to 4 years: a propaedeutic year followed by 3 graduate years. Second (and independently) a reorganisation has been started to cut costs, to the extent of Dfl 300 million a year (called euphemistically a redistribution of tasks). Some people more or less drown in the ensuing conflicts, meetings and measures. Others thrive and produce interesting studies. Systems people still seem to belong to the latter group, as testified by the presentations at the April meeting in 1984. Five different contributions - all from the University context - demonstrated the variety and

strength of ongoing systems research. The topics are worth mentioning: "Interactive simulation" (J. van Oosten), "Modelling physiological control systems" (M. Woerlee), "Social maintenance" (E. R. Muhring), "Obstacles to energy saving" (R. de Man), "Effective representation of the knowledge of chessgrandmasters" (H. J. van der Herik).

Members of the Dutch Systems Group have now received their copy of the IFSR journal Systems Research free of (extra) charge (i. e. paid for from their fees). The reactions to the first volume have been very positive.

Gerard de Zeeuw

## FUSCHL CONFERENCE APRIL 30 — MAY 4, 1984

## ARE THE DEVELOPING COUNTRIES LARGE SCALE SYSTEMS SUITABLE TO BE TACKLED BY MEANS OF THE SYSTEMS AND **CYBERNETICS APPROACH?** DEVELOPED, DEVELOPING, AND UNDERDEVELOPED

Elohim J. L. Sección de Graduados de la E.S.I.M.E. Instituto Politéchnico Nacional

Asociación Mexicana de Sistemas y Cibernética

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## A VERY FIRST NEED

T:

In the Fuschl Group we are interested in learning how to get "a holistic view of the world, its peoples, their problems and potentials" (Preface of FC 82).

Actions for implementing this view are also our concern, such as ,,to build a commitment towards the improvement of the human condition everywhere and the enrichment of quality of life for all" (Part 1, Chap. One Parag. B. 3. of FC 82).

As suggested by Horst Wedde (FC 82 pag. 69) I am convinced that , everybody (inside the group) knows how to tune and play an instrument".

I feel certain also about the necessity of ,,developing our ways to play together, to rehearse".

Then, it is indispensable for our purpose to make up our minds about the items to be tackled for us, all together

During the first Symposium, two years ago, eighty titles of items emerged and all of them were considered ,,unique doors which can be opened to many possibilities for the future".

However, these items are quite scattered into one of the possible world views.

I wouldn't dare to guess how many world views can be build by the members of the group.

Besides, to my knowledge, these items were not related either to a certain priority or sequentially among themselves.

The number of tunes, songs, ... sonatas, symphonies that we have to compose and play together is countless.

Let us assume, for the time being, that I have convinced you, the participants at this Fuschl Meeting (April 84), that one of the CONJOINT HOLISTIC COMPOSI-TIONS that almost all of us have interest in playing together is concerned with the problems of developing countries and the transcendence of their solutions for a more rational future of human society.

The title of this composition is THE SYSTEMS AND CYBERNETICS FOR THE DEVELOPING DEVELOP-MENT OF COUNTRIES.

## DEVELOPMENT

During the last decades we have been hearing that a country can be classified either as a developed or a developing one.

The criteria for defining these two classes are not universally accepted.

However, in general terms it has been declared that a developed country, is characterized by a developed development as a resultant of being highly industrialized. Due to this fact the country has a certain autonomy for the conduction of its economy; a fact that allows the assurement of a relatively high standard of living to its population.

Instead in a developing country, severe restrictions over its economical life are imposed by decisions made in several of the highly industrialized countries. A very specific kind of economic and political strategy is required for each country in order to increase the production of goods and services. A production that would satisfy the needs of its population bearing in mind the necessity of assuring a rational use of the natural resources available. This strategy has to be designed taking into account the severe restriction imposed by the developed countries.

Besides, it is also heard that a country has an underdeveloped development in the case that its natural, technical, financial, economical and/or political resources are less than required for improving substancially the standard of living for its population.

These three terms are used very widely and unconsistently as a measure of the level of development reached by a country. They are a very first, global view, very subjective, of the interaction of countries in our world in our times.

However, these three terms do express nothing about the potentiality of the countries for evolving as a whole inside the community of nations.

#### ANALYZING THE SUBJECT

It is not acceptable, from a scientific point of view, to assume that some nations have reached the end of their development as suggested by the term developed. Besides it is a well known fact that many of these countries are today still facing big problems concerning misery, poverty, ignorance, illiteracy, deficiency of justice and even hunger, ... in spite of the high level of average development reached by the country as a whole.

It is unacceptable from a human point of view to justify the existence of underdeveloped countries without ha-

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ving chances of development, remaining always very poor in spite of the fact that most of these countries have a large number of the most valuable resource they could have: human beings.

Based on this arguing a very first evidence is that any country is a developing one and will continue being so if at least its population is allowed to work and live, being conscious about the necessity of learning to develop harmonically its individuality as a nation, keeping in mind that all nations have a similar right to be exerted on our Earth, the only one that we have available, for the time being.

There are some other facts to be analyzed.

The quality of life for the population living in the so called developed countries is better than the quality of life allowed to the people living in a developing country.
The living conditions in the highly industrialized countries compared to the infrahuman conditions usually imposed to millions of human beings inside the underdeveloped world are so different that this is not any more acceptable from the human point of view.

(3) The richness of some developed countries having a relatively very small amount of natural resources and the poorness of developing and underdeveloped countries having a relatively large amount of natural resources that usually are exported from their territories is a contradictory question unacceptable for organizing the development of mankind.

(4) During centuries and still today, the leaders of some peoples, the governments of some nations have taken advantage of historical conjunctures and have put forth military, political, economical and/or cultural domination over most of the nations.

This kind of domination has been exerted also inside many countries and limited the progress of ethnical and social minorities.

Piracies and robberies have been the support for the development of a few nations. The rest of countries which represent the majority of human beings, have been, one generation after another, struggling against an undesirable colonialism that has not allowed them to use effectively their potentiality in order to impulse their individual, regional and national developments.

Very often this colonialism is considered by those who are imposing it by force, a reasonable action, mainly because they get large and extensive benefits (resources) from it, but also because they believe that they are offering political, military and economical protection to the colonized people. They even dare to argue that the cultural values imposed are free contributions to the development of the colonized country or community. They do not realize that the development of something is the result of internal forces searching out how to realize its individuality.

(5) The great advancements in science and technology that have occurred in the very last decades due to the development of the productive forces in the highly industrialized countries have been the origin of the improvement of the standard of living in these countries, but also have been used for the design and construction of very sophisticated weapons aiming to destroy human enemies. It is done without realizing how dangerous is today, for the still very fragile human civilization, to put in the hands of very few decision makers the possibility of destroying in one instant what has taken centuries to be built. The scientific knowledge and the high technology employed for the nuclear, biological and chemical weapons are today the greatest aberration of human rationality.

(6) A large number of technological devices and processes have been inserted during the last years into the in-

dustrial and agricultural production as an effect of the development of productive forces interacting with the results of the scientific and technical revolution. Increases in productivity and improvement in quality have been obtained as planned before the insertion. Undesirable secondary effects such as the pollution of the natural life and of the societal activities once detected are being solved when the insertion has taken place in the developed countries. Very rarely these undesirable effects are eliminated when the technological innovation is implemented in a developing country or an underdeveloped one.

What emerges from these facts is the evidence that the countries' classification as underdeveloped, developing and developed has as a main purpose to justify the political ambition of some governments of developed countries and the economical ambition of some international monopolies whose power is greater than many governments.

## MODELING THE DEVELOPMENT OF A COUNTRY

The occurence, 10.000 years ago, of the *agricultural re*volution and the happening of the *industrial revolution* starting in some countries during the sixteenth century are followed today by the *scientific and technical revolution.* The sequence of these three events is announcing today, at the beginning of the XXIst. century, the end of the prehistorical age of the human civilization.

Men and women who are alive in the present historical instant of the trajectory of mankind will be the builders of the basis of the real human civilization - the one based on the enormous potential rationality of its members if we are able to exert individual efforts for a peaceful world and to organize them in effective collective actions against those ambitious governors who quite irrationally are promoting the use of violence for solving (?) the conflicts among countries; against them, also because they decided to employ an important part of the intellectual capacities of their countries for the production of weapons to be used in nuclear, biological, chemical, ... sideral wars, i.e. for the destruction of the possibility of building the human civilization.

Being aware of this perspective, we could not avoid to use the possibilities offered by the systems and cybernetics approach to model the possible development of a country, to model the evolutionary trajectory of mankind, which means to use the latest advancement of the scientific attitude for understanding our world, and implementing the measures that will assure the progress of human civilization.

(1) Issues requiring financial, technological and political concessions of highly industrialized countries towards countries who are unable to produce what is required for satisfying the needs of their population. As a whole it is required to transform the present international economical order into truly human relations among all nations. Do we need any modeling of this process?

(2) Issues requiring the multidisciplinary joint effort of the institutions of various countries. Solidarity actions among human beings have been organized since the very beginning of mankind without requiring any model. Do we need today to model the great results expected from the solidarity actions among nations in order to convince ambitious people who are in power positions, to show them that they are wrong as referred to the interest of mankind?

(3) Issues that each country can and has to deal with independently, based on the right evaluation of the needs that it is required to satisfy and the resources available for such a purpose.

Corruption and robberies inside a country can they be prevented by modeling the possibilities offered by the organization of the collective work?