

# **Challenges from the Future**

**PROCEEDINGS OF THE INTERNATIONAL  
FUTURE RESEARCH CONFERENCE**

**VOLUME IV**

Compiled by **JAPAN SOCIETY OF FUTUROLOGY**

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## EDITOR'S NOTE

THE PROCEEDINGS of the International Future Research Conference held in Kyoto Japan from April 10 1970 to April 16 1970 centered around the papers presented and the discussions conducted are compiled in four volumes

The main subjects presented and discussed during the conference were 1) Reporting of activities and exchange of information by representatives of various organizations in the world that are presently conducting future studies and research 2) Presentation of papers by participants which were classified into eight general sections from the overall theme of Challenge from the Future and discussions based on these papers and 3) Discussion on the possibility of organizing an international body to conduct futures research

Due to the limited time in which an extensive range of topics were presented thorough discussion on all of the papers were not possible However from the viewpoint of accomplishments the Conference was a tremendous success and it has marked a prominent footmark in the course of futures study and research

Inclusion of the complete proceedings of this Conference in nine volumes was originally planned but due to editorial and other considerations the following four volumes have been published

- Volume 1** Section 1 The Role of Futures and Futures Research  
Section 2 Research Methodology  
Special Session Perspectives on Multi Channel Society
- Volume 2** Section 3 Technological Innovations and Social Change  
Section 4 Education for Future  
Section 5 Environmental Changes—Time and Space—
- Volume 3** Section 6 New Values New Man  
Section 7 Social Systems and Social Innovation  
Section 8 World Futures
- Volume 4** Program and Proceedings of the Conference

The first three volumes include all of the papers presented at the Section Meetings during the Conference and also papers contributed by people who were not able to attend

Volume 4 includes the opening lecture by Dr Ichiro Nakayama president of the Japan Society of Futurology the program reports on activities of organizations engaged in futures research summary reports submitted by each Section discussions on the possibility of organizing an international body and a list of participants

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## PREFACE

The International Future Research Conference held in Kyoto in April 1970 was indeed the first of its kind in the world both in scale and in the wide range of topics discussed

Up to the present day in all nations of the world man has strived to transform nature around him in order to build up his own environment Yet when we reflect upon the course of these transformations and constructions we find that the human situation has unwittingly begun to harbor the germs of several grave dangers Thus the critical problems facing mankind at this moment are those of how to avoid these dangers how to solve the diverse problems which have already manifested themselves and how to construct the society of tomorrow

The past decade has seen the emergence in various parts of the world of individuals and groups attempting to solve these problems It is with these people that futurological studies have begun to take root These individuals and groups have held meetings here and there each contributing the results of their separately done studies Among these many meetings the international congress held in Oslo in September 1967 under the auspices of Mankind 2000 offered an opportunity for scholars from various countries interested in futurological studies to exchange views and discuss issues freely in an intimate atmosphere Although the scale of the congress was small it served as the forerunner of the Kyoto Congress

It was extremely significant not only for the Japan Society of Futurology that we were able to hold an international congress of this scale under the present circumstances but also for individuals and other groups engaged in futurological studies The newly born Futurological Society of Japan took the initiative and invited futurologists from Asia as well as Europe and America including the socialist countries

The theme of the Congress Challenges from the Future was adopted on the basis of our common awareness that mankind in this latter half of the twentieth century is being seriously challenged by the future society The Congress pointed up anew that like it or not mankind can no longer avoid taking up this gauntlet

One of the major accomplishments of this Congress was that it showed in its sessions that numerous friends in various parts of the world are working actively and constructively to meet this challenge and that each of them is contributing to deepen common understanding and friendship as members of that family of man which transcends purely national interests

The Japan Society of Futurology has edited the complete records of this Kyoto Congress into four volumes of proceedings. This undertaking has caused us to recall anew the significance and results of the Congress and to hope that futurological studies with the impetus of this Kyoto Conference serving as a driving force will make rapid progress. At the same time it is our fervent hope that the people and countries of the world which possess diverse histories and traditions will avoid catastrophic confrontations and attempt to co exist peacefully to build a solidarity of mankind on a global scale

## PROGRAM

Theme

### CHALLENGES FROM THE FUTURE

#### Topics discussed

##### Morning Session

10 00—11 30 The exchange of information among various organizations engaged in future research all over the world

##### Section Meetings

13 30—15 30 Section 1 3 5 7

15 45—17 45 Section 2 4 6 8

#### The theme of each section

Section 1 The Role of Futures and Future Research

Section 2 Research Methodology

Section 3 Technological Innovations and Social Change

Section 4 Education for Future

Section 5 Environmental Changes—time and space—

Section 6 New Values New Man

Section 7 Social Systems and Social Innovation

Section 8 World Futures

**Schedule****10 April, Friday**

- 9 00 Registration
- 10 00 Opening ceremony
  - Business messages from secretariat
  - Opening lecture by the President of Japan Society of Futurology
  - Reception by Japan Society of Futurology followed by get acquainted cocktail and luncheon
- 13 30 Section meetings
- 18 30 Dinner
- 19 30 Special events

**11 April, Saturday**

- 10 00 Morning session
  - Athens Center of Ekistics
  - Center Berlin for Future Research
  - Drexel University—Center for Urban Research and Environmental Studies
  - Futures
  - Futuribles Internationales
  - Futurological Society of Czechoslovakia
- 11 30 Free discussion and lobby talks
  - Luncheon
- 13 30 Section meetings
- 18 30 Dinner
- 19 30 Special events

**13 April, Monday**

- 10 00 Morning session
  - FUTURUM International Periodical for Future Research
  - Harry S Truman Center for the Advancement of Peace
  - German Society of Future Research
  - Institute for the Future
  - International Peace Research Institute—Oslo
  - Japan Society of Futurology
  - Korea Institute of Science and Technology
- 11 30 Free discussion and lobby talks
  - Luncheon

- 13 30 Section meetings
- 18 30 Dinner
- 19 30 Special events

**14 April, Tuesday**

- 10 00 Morning session
  - The Korean Society for Future Studies
  - O E C D
  - Mental Health Research Institute
  - The Rand Corporation
  - Polish Centres for Future Research
  - Royal Swedish Academy of Engineering Sciences
  - S A I N T—Salzburg Assembly Impact of the New Technology
  - IREA—Gruppo Futuribili Italia
- 11 30 Free discussion and lobby talks
  - Luncheon
- 13 30 Section meetings
- 18 30 Dinner
- 19 30 Special events

**15 April, Wednesday**

- 10 00 Morning session
  - Mankind 2000 International
  - Werkgroep 2000
  - Academy for Research on Futures/Society for Research on Futures
  - UNESCO
  - Venezuelan Center for the Study of the Future
  - The Pierre Teilhard de Chardin Association of Great Britain and Ireland
  - IRADES—Institute for Applied Research Documentation and Study
  - Future Oriented Research Organizations in France
  - The Science and Life Research Center
  - \*Summary Report on Activities in Hawaii
- 11 30 Free discussion and lobby talks
  - Luncheon
- 13 30 Section meetings
- 18 30 Dinner
- 19 30 Special events

**16 April, Thursday**

- 10 00 Summary reports by the moderators of section meetings
- 11 30 Free discussion and lobby talks  
Luncheon
- 13 30 General assembly on the possibilities of new International Organization in Future Research
- 18 30 Farewell Dinner

**17 April, Friday**

- 12 00 EXPO Tour

**SECTION MEETING****10 April, Friday**

13 30-15 30

- SECTION 1 The Role of Imagination in Future Research  
ROBERT JUNGK  
Problems in Social and Cultural Forecasting  
JOHN MCHALE
- SECTION 3 Technology of the Future and its Impact on Society  
M S IYENGAR  
Social Impact of Computalization—An Application of the Pattern Model for Industrial Society  
YONEJI MASUDA
- SECTION 5 A Constructive Approach to the Handling of Increasing Leisure  
WILLIAM WOLF (delivered by STANLEY LESSE)
- SECTION 7 Social and Political Innovations A Synthesis of Some View Points  
VALERIO SELAN  
The Changing Environment for Political Innovations Way to Stimulate Political Innovations  
PETER MENKE GLUCKERT  
On Social and Political Innovations  
ARNE SØRENSEN

15 45-17 45

- SECTION 2 Forecasting Methods in the Social Sciences  
DENIS F JOHNSTON  
Toward a Cybernetic Theory of Societal Change  
AMITAI ETZIONI
  - SECTION 4 Education for Futurism in the U S A An On Going Survey and Critical Analysis  
WENTWORTH ELDREDGE  
Educating Man for the 21st Century—Desirable Possible or Probable Futures?  
GEORGE SLUIZER
  - SECTION 6 Must We Change Our Concepts of Morality and Action as We Enter Post industrial Civilization?  
GEORGE GUERON  
Man and Culture in Post Industrial Civilization  
JIRO SAKAMOTO
  - SECTION 8 Space Exploration and Astronomy  
MASARU TADOKORO  
National Power A Basis for United Nations Voting and Aid  
NORMAN ALCOCK
- 11 April, Saturday**
- 13 30-15 30
- SECTION 1 Delphi and Cross Impact Techniques An Effective Combination for Systematic Futures Analysis  
SELWYN ENZER  
Assumptions about Man and Society and Historical Constructs in Future Research  
HENRY DAVID
  - SECTION 3 How to Introduce Change in Complex Systems  
GUSTAF DELIN  
The Delphi Technique as a Tool in Steering Complex Systems  
L G REMSTRAND  
Future Studies and the Corporation  
LUCIEN GERARDIN  
On the Measurement of Preference for R & D Planning  
HELMUT KRAUCH

- SECTION 5 General Concepts of Multi Channel Environment  
KIYONORI KIKUTAKE  
Future's Town as an Act of Choice How to Prepare It  
YONA FRIEDMAN
- SECTION 7 Methodological Problems of Measuring Social Innovations  
HELMUT KLAGES  
Alternative Domestic Political Futures  
YEHEZKEL DROR
- 15 45-17 45
- SECTION 2 A Contribution to the Methodology of Futurology  
TOSIO KITAGAWA  
Methodology Problems Related to the Establishment of a  
General System of Prognostication  
ZAHARI STAIKOV
- SECTION 4 A University for the Post Industrial Society  
HAROLD LINSTONE  
The Presence of the Poet in Future Society  
CLAIRE LEJEUNE
- SECTION 6 The Psychosocial Future of Man—Golden Age or Stereotypy  
STANLEY LESSE  
Social Philosophy in the Future Aims and Problems  
KLAUS TUCHEL
- SECTION 8 From the Law of Nations through Peace Research and Plan-  
ning to Futurology  
MARION MUSHKAT  
Structural Pluralism and the Future of Human Society  
JOHAN GALTUNG

13 April, Monday

13 30-15 30

- SECTION 1 Typological Survey of Futures Research Development Pro-  
gram Outline  
JOHN MCHALE  
Notes on Information and Epistemology in Futuristics  
STEPHAN SCHWARZ

- SECTION 3 Social and Cultural Consequences of Automation  
FRED POLAK  
Influence of Chemical Innovations of Future Developments  
J SCHULZE and KOLBEL  
The Challenge of Automation  
ELLIS SCOTT
- SPECIAL SESSION BY JAPAN TECHNO ECONOMIC SOCIETY  
Human Revolution—Multi Channel Society  
JUNNOSUKE KISHIDA  
Methodological Approach to Multi Channel Society  
YUJIRO HAYASHI and KEIICHI YAMADA  
An Interface Between Technology and Society  
HIROSHI MATSUSHITA  
Spread of Soft Technology Technological Innovations and  
Their Impacts in the Modern Multi Channel Society  
NOBORU MAKINO
- SECTION 7 Company Loyalty of Employees in a World of Plural Values  
TATSUO TAKAHASHI  
Innovations in Bureaucratic Systems  
HANS RIEGER
- 15 45-17 45
- SECTION 2 Systems Analysis for Policy Planning  
KENICHI KOHYAMA  
Forecasting Analysis and Decisionmaking  
FELIX KAUFMANN  
The Anonymity of the Omniscient Institutions Versus the  
Anonymity of the Uninformed Masses  
FRITZ LIENEMANN
- SPECIAL SESSION BY JAPAN TECHNO ECONOMIC SOCIETY  
A Flexible System in Education  
MASAO GOTO  
Homo Movable and Metabolism in Multi Channel Society  
KISHO KUROKAWA  
Value in Leisure Life  
HAJIME KARATSU  
Re Definition of Human Potentialities  
KAZUHIKO ATSUMI  
Dynamic Balance in Political Innovation  
JUNNOSUKE KISHIDA



## SECTION 6 Images of Man and the Futures of Human Institutions

RICHARD WAKEFIELD

Human Development in a Critical Future

JAMES FRANK WELLESLEY WESLEY

## SECTION 8 Evolution or Revolution A Valid Dilemma?

CANDIDO A MENDES de ALMEIDA

The Industrial System as the Basis of World Society

BARTHOLOMEUS LANDHEER

## 14 April, Tuesday

13 30-15 30

## SECTION 1 The Study of Science Fiction as a Forecasting Methodology

DENNIS LIVINGSTON

Futurism Pro and Con

A J PENNINGTON and A B SHOSTAK

## SECTION 3 How Men can Shape their Future

JOHN PLATT

Policy and Future Research—Some Important Questions

Principles and Issues

R W LAMSON

Actors Ultimate Goals and Social Indicators

ESKIL BLOCK

## SECTION 5 Kyoto—A Two Thousand year Plan

ATSUSHI UEDA

Resource Conserving Urbanism Progress and Potentials

RICHARD MEIER

## SECTION 7 Futures Planning in the Corporate Environment

R L RUGGLES

15 45-17 45

## SECTION 2 A Framework for Futuristics in Hawaii

JAMES DATOR

On some Theoretical and Ideological Problems of Social  
Forecasting Prognostication and Planning

VELICHKO DOBRIANOV

Citizen Sampling Simulations A Method for Involving the

Public in Social Planning

STUART UMPLEBY

## SECTION 4 The Role of Aesthetical Education in the Future of Technological Society

ROGER GARAUDY

Toward A New Technology of Education

ERIKA LANDAU

## SECTION 6 Evolutionary Trends and Human Potential

BERNARD TOWERS

The Legal Philosophical and Political Problems Posed by the  
Emerging Technologies

ALBERT SOMIT

Evolution Value and Buddhism—Development of Biological  
Science and Its Effects in Future

YOICHIRO KURODA

## SECTION 8 The Challenges of Growth in the Developing Countries

M S IYENGAR

A Trend Scenario of France in the Year 2000

JEROME MONOD

## 15 April, Wednesday

13 30-15 30

## SECTION 1 Use of the Future for Development Policy

HAHN BEEN LEE

Critical and Establishment Futurology

BART VAN STEENBERGEN

On Future Research and its Role in the World

JOHAN GALTUNG

## SECTION 3 SINIC Theory—An Approach to the Future

KAZUMA TATEISI

A Methodology of Forecasting the Interactions between  
Technological and Social Changes

OTA SULC

A Policy View of Future Studies Alternative Futures and  
Present Action

YEHEZKEL DROR

## SECTION 5 Future Urbanization Patterns a Long Range Worldwide View

JOHN PAPAIOANNOU

Tomorrow's Transportation in France—Methods and Results—  
G GASTAUT

## SECTION 7 International Technology Assessment and the United Nations System

DENNIS LIVINGSTON

Socio Political Decision Processes and Social Planning  
H P WIDMAIER

15 45-17 45

## SECTION 2 For a Prospective Conflictology of Future Research Development Program Outline

HENRI BIANCHI

Forecasting as an Aid to Planning—A Few Concepts—  
ULF LANDERGREN

## SECTION 4 Fiscal Outlook Analysis for Education

Werner HIRSCH

Two Problems of Education and the Future Resistance to  
Change and some Alternative Futures of Educational Administration

RACHEL ELBOIM DROR

Future Studies and Educational Policy  
RALPH A SMITH

## SECTION 6 The Affluence and the Psychology of the Collector A Case History of the Evolution of Cultural Value Systems

JOHN STUTEVILLE

Values and Development

HECTOR FONT VIALE RIGO

## SECTION 8 Methodology for Incorporating Environmental Quality Considerations in Future Planning The Electric Power Industry as an Example

R J FRANKEL

A Possibility of Constructing a Dam to Change the General  
Oceanic Circulation

KEIJI HIGUCHI

A Conceptual Model of Technological Development to Convert  
Various Elements into Useful Materials

SHOSAKU FURUTA

## OPENING LECTURE

## ECONOMIC DEVELOPMENT OF JAPAN RECONSIDERED

ICHIRO NAKAYAMA

*President Japan Society of Futurology*

It is indeed a great pleasure and privilege for me to speak to you on the Japanese economy the future of which is of great concern to us

Much has already been said about the secret of the amazing growth of our economy especially since the end of the War In fact the rate of growth in GNP in recent years has been so striking that it has drawn the attention of economists sociologists and scientists in related fields to investigate the causes of this development Frankly speaking it has surpassed even the most optimistic predictions of the Japanese But I will not linger on past accomplishments any longer for the problems clearly lie in the future

As you all know some recent predictions concerning the Japanese economy are based on the expected continuation of the present trends It is said that if the present trends do not suffer any serious setbacks in say the next thirty years then Japan will become an economic giant as nation This may seem plausible given the sustained pace of growth up to now Last year the GNP of Japan climbed to 200 billion dollars compared with 900 billion for the U S It is not so much a matter of the absolute amount but the speed with which the gap between the two has diminished The ratio was one to twelve fifteen years ago and this had fallen to one to four and a half last year This result has been achieved during only a dozen of years of development It is quite natural to suppose even more fantastic figures by projecting present trends into the future

But can Japan really continue this tempo of growth in the future? This is the essential question which is vital to Japan To answer this question fully goes beyond my ability even if I were to confine myself to the field of economics To make a more or less concrete prediction is also not my purpose for the moment for before making any such attempt I feel it is necessary to listen to the advice and opinions of those who have gathered here from every part of the world We have made many discoveries regarding many aspects of our daily life thanks to the unpreoccupied observations of foreign visitors So in this case too we have been given many useful suggestions for solving the problems of the day from attentive observers from abroad I have been able to learn a great deal from them

for they have opened my eyes to some neglected aspects of various subjects I think however that it may be worthwhile to try again to explain the cause of Japan's economic development from a Japanese perspective or through Japanese eyes in order to answer possible doubts remaining from explanations attempted elsewhere and to provoke some questions to be answered through further research and study

I do not know whether my presentation really has any direct connection to the study of futurology strictly defined This is because my search for the reasons behind Japan's rapid growth necessarily has to cover at least the past one hundred years of industrialization of Japan which seems to be quite irrelevant to the future But in the case of Japan especially because of the tremendous speed it has shown the two directions of research are not so contradictory as they may seem Indeed the exceptional rapidity of social changes which has been brought about by the process of industrialization has undermined the traditional foundations of the society and left a vacuum in value system which is a major cause of instability in Japan I will try to explain more clearly why this has happened in the following but if this is true then it must be admitted that it is because of this void that we must look carefully to the future In a word futurology has become a Japanese subject because of Japan's extraordinary rate of growth which has deeply affected the very basis of the society

Let us turn now to the causes of the amazingly high rate of growth in Japan I think there are two categories of factors which have contributed to this growth namely factors in the postwar period which accelerated the pace of postwar development and factors which have been working consistently over a very long period of time at least since the Meiji Restoration (1868)

Factors in the first category usually seem to draw the most attention of the observer A sharp decrease in military expenditures the postwar structural reforms of the economic framework such as land reforms and revisions of the taxation system etc have certainly had a favorable influence on economic growth The list of contributing factors in this category may be further increased along with differing views as to the main causes of the growth If for example one holds that it is because of the high rate of investment in both the public and private sectors then the peculiar nature of Japan's financial system and the special tax exemptions to encourage investment will be emphasized as the direct causes underlying the growth In this ever changing world we can not deny the importance of these short term factors in affecting actual business behavior But I will not go into details on this point for our main interest lies in the factors of the second category This by no means overlooks the direct influence of the former but it is to suggest that the former factors can be reasonably interpreted only together with the long range factors I have noted above that the factors in the first category have been accelerating economic growth and in that way contributed to it In other words these factors are to be appreciated as contributing ones only when they are combined with the factors persisting over a much longer period of time

Again I want to draw your attention to the problem we are really facing It was as I have said before to clear the way for approaching the question of whether the Japanese economy can continue to sustain the present pace of growth in the future If perpetuation is a critical point in question the fundamental

causes of growth should be sought in the factors which have contributed persistently over a longer period

From an economic point of view I think there are at least three major factors which were and still are operating persistently even in present day Japan The first is the high rate of savings the second is the abundant supply of labor and the third is the dual structure of the economy caused by the very rapid pace of development The first and second factors may easily be understood and can be proved by statistics Even before the War the rate of personal savings exceeded 15% on the average and that of the postwar period has ranged between 17 to 20% except for the three years immediately after the end of the War It is all the more remarkable when we note that the high rate of savings has been achieved in spite of a low standard of living of the period under observation I will return a little later to this point But at any rate there is no question that this high rate of savings made possible a high rate of accumulation of domestic capital which is generally considered a necessary prerequisite for development As to the supply of labor we must admit that Japan has been very fortunate in this respect Japan has never experienced a shortage of labor to the extent that importation of foreign labor was necessary The main source of the labor supply has been agriculture as seen elsewhere in the course of industrialization This can clearly be seen by the sharp decrease of the agrarian population in these decades For a very long time in fact until the end of the War the agrarian population occupied a little more than 40% of total population while ten years ago it had decreased to 30% and recently the figure has fallen to 20% Having in mind the rather high rate of natural increase in population we can see how large the supply of labor for industry was during the process of industrialization This factor has been even more important in postwar development until recently when the shortage of labor has become a serious problem for industry for the first time

The third factor may be a little difficult to understand But by dual structure we usually mean the co existence of modern industries and premodern ones based on the traditional society Whatever definition may be attached to the modernization of industry the co existence of the two is generally accepted in countries where industrialization is introduced on more or less stable traditional society But the impact of industrialization differs materially depending on the speed of the change And in the case of Japan because of the unprecedented speed of change the co existence of the two has remained a remarkable phenomena which has a rather important bearing on the causes of development The differences between the two can be described by the gaps in the average wage rates in the size of enterprises and in the amount of available capital etc But the meaning of the co existence speaks more than the statistical differences The real significance of it is as a stimulus to development We may say that the ever widening gap between the two creates tensions which accelerate the industrialization process On the one hand there has been a bullish sentiment on the part of industrialists to compete with the best producers of the world with the most advanced techniques available On the other there had been a constant striving on the part of the farmer and small scale industrialists who have adhered to pre modern methods of production The widening gap between the two has had some favorable effect on the mobility of labour and partly also on the high rate of saving which I would like to explain later

Before leaving this topic I wish to emphasize again the speed of change which has been the main cause of the dual economy. In the case of Western countries industrialization or more broadly modernization has evolved gradually from traditional societies so that the gap between modern industries and the pre-capitalistic industries clinging to an old fashioned way of life and production was not so large as in the case in Japan. Consequently the impact on the evolving economy was smaller. The existence of the gap in the case of Japan has been in some cases interpreted as a contradiction between industrialization and modernization in so far as the former failed to modernize the society in general instead leaving behind the so called feudalistic traits. This view is shared predominantly among Marxists in Japan. But regardless of whether or not it is true the very existence of this gap has been one of the powerful reasons for the accelerated rate of growth of the Japanese economy.

We have mentioned so far the three main factors which contributed to the speedy industrialization over the past one hundred years. But economic factors do not operate independently from other factors based on the structure of society. If we look deeper into the underpinnings of these factors it is apparent that there were social and cultural factors at work as well. We can call this the traditional values of the society for the moment. Because of this value system these three factors could work effectively over a long period of time. That is because of this value system of the traditional society Japan could succeed in industrializing rapidly. In other words it may be said that Japan was able to enjoy the economic advantages of a high rate of saving, abundant supply of labor and even the favourable effect of the gap between the modern and pre-modern sectors of industry thanks to the persistence of the value system of the traditional society. Without this time honored value system there could have been no success whatsoever.

Returning to the three long term factors as to the high rate of savings it is all the more striking because of the low level of per capita income throughout the long period of industrialization. If the rate of savings did not change much during the period of industrialization which was also the period of rising incomes we must take for granted the persistence of the consumption pattern of the society. What was the cause of this persistence? Some attribute it to the lack of a demonstration effect which is doubtless true. But if we look deeper into the question we must note the virtues of thrift and austerity stemming from the foundations of the traditional society which have been transmitted mainly through the teachings of Confucius mixed with the belief of Buddhism—the teachings of modesty and the love of hard work. The basis of a traditional society can be found in the morals and value judgements of the people which in the case of Japan crystallized into a fixed pattern of consumption. This might as suggested elsewhere have been the result of the strategy of the dynastic elite of that era. But I believe it was more a natural outcome of the perseverance of an austere traditional life which was too strongly ingrained to be modified at least within a short period of time. In short the virtues and austerity of the traditional society were fully utilized in financing industrialization and the high rate of personal saving was only a consequence of that unconscious policy.

The same can be said with respect to the supply of labor. There was no problem about the labor supply so long as the transfer of labor moved smoothly from

agriculture to industry. The fact that Japanese industry was blessed with an abundant supply of rather well educated labor throughout the whole period of its expansion contributed to its speedy development. But speedy development was not caused by mere quantity. There were other important aspects connected with this long range factor of growth. It is a fact that labor was generally paid low wages but nevertheless the industrial relations was stable over a long period. Much has been said about the low wages in Japan. But the low wages which prevailed in industry during industrialization did not generally speaking bring about a harmful effect on labor relations due to the peculiar nature of the labor force which originated from the agricultural sector. Industrial laborers in Japan never severed ties completely with their rural homes to which they could return when necessary. The mere existence of this possibility of moving back made labor relations in Japan somewhat peculiar for workers brought with them into industry traditional modes of thinking which made relations rather paternalistic in nature. Employees were committed to enterprises for life while they assumed responsibility for the welfare of the employee. As will be discussed later the picture has changed dramatically in connection with the development of the labor movement especially in the postwar period but this basic character has been maintained. If this is an important element in accelerating economic growth we must understand the real significance of the nature of traditional society which has been supporting the relation.

In regard to the third factor namely the dual structure of the economy the importance of the traditional society is definitely already evident. As I pointed out earlier the term dual structure means a situation in which both modern and traditional industries co-exist in one society. As stated above this has been brought about in the case of Japan by a rapid introduction of the process of industrialization. This suggests a combination of relatively low income levels with a high level of technology with resulting benefits of low prices and a high rate of export growth which further stimulated economic expansion. So the dual structure can be said to have contributed much to the growth of the economy at large. Thus the fundamental cause of such a development should be sought in the persistence of traditional modes of thinking which have remained because of the amazing speed of change.

In general the industrialization cannot help but have a profound influence upon the nature and structure of the traditional society. No traditional society can remain isolated from this influence and Japan is no exception. However in spite of this strong influence the fundamental features of the traditional society in Japan underwent no change. The feudalistic heritage with its hierarchy in the sense of responsibility, the ability to work as a team and the paternal relations based upon the family system have been kept intact for a long time thus providing favorable conditions for the spread of industrialization. Summing up we can say that Japan was able to utilize or to put it more boldly Japan has exploited the merits of its traditional society to promote the process of industrialization. It was the happy marriage of the traditional society and the new process of industrialization that made success possible. But can we continue to depend upon traditional values? This is the question I would like to take up in the concluding part of my address.

The rapid industrialization of Japan was made possible by the factors described

above whose origins are deeply rooted in the traditional society. But above all the stability of the social structure together with the system of values of a family oriented society served as the foundation for modernization. Thanks to this stability and continuity Japan was able to raise the necessary capital without relying much on foreign aid to attract a continuous flow of labor to industry and to establish fairly good labor relations in the face of rather difficult circumstances surrounding industry. I know that we have to take into our consideration more factors than just economic ones. For this reason we touched upon some broader factors underlying modernization that lie beyond economics. Indeed it was these characteristics of the traditional society or more simply the diligence, hard work, faith and the sense of loyalty that really counted in the process of industrialization. Without this mentality on the part of the people we could not possibly expect this rate of growth at all.

The traditional society of Japan has proved its capacity to absorb effectively the impact of industrialization. But can this mentality be extended intact into the future? Can the nature of the traditional society be preserved and flourish in spite of the tremendous impact of technological changes? This is the question. We have noted that the merits of the traditional society seem to have been exhausted owing to their relentless exploitation during the course of successful development. This exploitation cannot help but have a great influence upon the very nature of the traditional society from which the process started. In fact such an influence can already be demonstrated at least partly by the changing trends in the three long range factors of growth mentioned above. As for the first factor, fortunately the rate of personal savings has not decreased much recently owing to the more rapid increase of nominal income over the rise in the cost of living. But there are some signs of change in consumption patterns which must in turn affect the rate of savings in an adverse direction. As for the second factor, the supply of labor, the change in its pattern is even more significant. For the first time in its history Japan has begun to experience a shortage of labor. This will undoubtedly have an important effect not only upon the degree of labor mobility but also upon the advantages it has had during past development. As for the third factor, the dual structure of the economy, we recognize that it is now disappearing fairly rapidly and thus the impetus it gave to acceleration of the rate of growth is declining in strength. The wage differentials between large and small firms still exist but they are being narrowed quickly owing to the strength of the trade unions on the one hand and to the favorable economic situation on the other.

It is to be noted that all these changes or signs of changes in the long term factors of growth are nothing but the outcomes of successful industrialization. Industrialization brings about changes in the character of the traditional society. The changes in the three factors are derived ultimately from changes in the supporting traditional society. What have been the encouraging factors in the past are now becoming increasingly restrictive. In a word we are now facing the need to develop new social and cultural patterns which will not only correspond to but will be compatible with the continuing high rate of growth in the future.

How to envision clearly the new society before us is a very difficult and complicated problem to tackle. This is because the scope of changes which must be taken into consideration is extremely wide, going far beyond the field of econom-

ics. For example, the dynastic elite which proved so effective in launching industrialization has gradually been transformed into typical bureaucracy. The function of entrepreneurship has gradually become more and more routinized. The government which is still active in directing the course of development is now being forced to look after the social welfare of the people. Management is now shifting from its older paternalistic practices to more rational ones. The life time commitment system still prevails for employees especially in large firms, but competition is bringing about some changes in this employment system. Accordingly, industrial relations is now losing its paternalistic character, notwithstanding the persistence of enterprise side unionism which is peculiar to Japan. In short, in spite of apparent stability there are vast and far reaching changes affecting the nature of the society. Putting all these changes together we may say that we are standing at a crucial turning point not only in terms of economic development but also in terms of the trend of modernization in general. Japan has been trying to catch up to the level of the Western world as fast as possible. It has succeeded in achieving this target in so far as the economy is concerned. But has Japan really achieved standards equal to those of the Western world? The more Japan draws near to the Western world in terms of the rate of growth, the level of techniques, its institutions and organizations such as the roads, buildings and schools and so on, the more aware we are of the gap between the two. Can this sensitivity about the gap be reduced by increasing efforts for modernization not only in the economy but also in the wider society, or will we have to remain thinking east is east and west is west forever?

It is not my intention to delve any further into the question of the future. But it might be worthwhile to make some suggestions related to the foregoing analysis of the situation. Since the questions I have dealt with here relates not only to the economic aspects of the situation but also to the fundamentals of the society, the suggestions could range over a vast area of the inquiry. But I will confine myself to two points which seem to have relevance in considering the future.

The first is the relation between industrialization and democracy. It is often argued that Japan succeeded in rapid industrialization but failed in achieving democratization. Or to put it more sharply, sometimes it is often argued especially by many Japanese intellectuals that the industrialization of Japan was achieved at the expense of democracy. It is true that the political development in Japan seems to have lagged behind economic development. It is true that even though we have had a modern system of politics for more than half a century there are still so many shortcomings in our political system compared with our economic one. Moreover, if we look back in history we find that the first requirement for Japan after the restoration in 1868 was industrialization for survival and politics was the means to realize it. It was quite natural that industrialization preceded democratization. Simply because Japan could not afford to care sufficiently about democracy.

But can industrialization be advanced further without democracy in the future? In the last resort, industrialization and democracy are the two basic components of modernization. The process of modernization has usually proceeded through the interaction of the two, thus the success of industrialization promoted the growth of democracy and vice versa. But in the case of Japan, as I noted above, the speed of industrialization was too fast to have the effect of

promoting democracy. Instead industrialization pressed ahead by making use of the traditional values of the society. In other words we must admit that there remain many weaknesses which must be remedied in order to establish democracy in the society. And to day the more we are made conscious of the exhaustion of the traditional values of the society the more we should give attention to this deficiency. If industrialization should go hand in hand with democracy in the long run we can see here one possible road of future development.

Second is the relationship with Asia. It may sound strange to speak about Asian relations at this stage in our remarks for Japan has always been a part of Asia. But Asia was not impressed much upon Japanese thought in the course of one hundred years of industrialization because Japan always adopted its models from the West and not Asia where for many years most countries were under Western or colonial rule. Of course this does not mean that Japan has completely forgotten its birthplace which is in Asia itself. It was only natural that much thought was given to Asia from time to time especially during periods when the reaction against an all too speedy westernization in the way of life was dominant. Some may recall the influence of Yukichi Fukuzawa who wrote on "Getting out of Asia" in this connection. But those ideas at the beginning of industrialization should be interpreted as merely a manifestation of a desire or urge to speed up the process of industrialization at that time and not as a real sign of serious concern about Asia. Broadly speaking it was only in connection with war or in connection with expansion of markets that Asia thrust itself into the forefront of Japanese concern.

But to day the climate has changed completely. Now Japan has caught up with the Western level of industrialization and is entitled to be a member of the international community of nations. And in its capacity as a member of this community Japan has to face with Asia anew from a broader view point than before. On the one hand Japan has realized that there is still an essential cultural gap with the West notwithstanding the strenuous efforts to catch up with the West. On the other hand it has discovered anew that it stands amidst Asia so that in the future it cannot neglect the neighboring masses of Asia. Thus its success in industrializing has broadened its field of vision to the whole world including Asia. At the same time however Japan has been made conscious of its Asian origin in many respects. That means we have to do something about the promotion of mutual understanding between Western and Eastern cultures in order to build a new world in the future.

Again reflecting on my talk I must ask myself what relevance this all has to futurology which is the subject of discussion at this conference. I am afraid I have paid too much attention to the past instead of the future. But the future springs always from the past. It is an important job for any futurologist to uncover and project future trends based on an objective analysis of the past and present and to suggest what choices are the best among the many possible. With this hope in mind I bring my lecture to a close.

## OPENING ADDRESS

THORKIL KRISTENSEN

*Professor  
Institute for Development  
Research Copenhagen*

Mr Chairman ladies and gentlemen I am sure we would all like to express our gratitude to the Japan Society of Futurology for having organized this conference on future research in Kyoto. I think Japan is exceptionally well placed to organize such a conference not only because Japan as we have seen is exceptionally efficient in organizing many things including international conferences because the transformation of traditional societies into something new, and partly unknown takes place at an unusual speed. I would say in this country

Japan has an old cultural tradition and Kyoto has played an important role as we all know in the history of Japanese society. At the same time the new element in human society present themselves at a unique speed in this country. Professor Nakayama has given us a very interesting description of recent development in Japanese society.

There is probably no other country in the world where economic growth after the Second World War has been as successful and as rapid as it has been in Japan. This seems to indicate that Japan has for it a future full of promises and this has already been predicted by many people but it is also likely to be a future full of problems because exactly this rapid transformation of society raises a number of new problems not known before. We have to to some extent learn how to deal with the problems of poverty. We have not yet learned how to handle the problems of the affluent society and we will have to learn that art very quickly because the affluent society presents itself in a very abrupt way. And I think we can draw two lessons from the unique experience of Japan or at least we have two problems on which the development of Japan can throw some light which I hope this conference can profit from.

One is to what extent can the presently developing countries perform a transformation of their societies similar to that of Japan? Those who look at the problems of the developing countries are often pessimists because it seems that the difficulties are overwhelming. There are however others who are optimists because they have seen for example in Japan what can be done under fortunate circumstances. In my home country Denmark we have what I think is an excellent definition of pessimists and optimists saying that a pessimist is a

person who sees in every problem a difficulty or in every task he sees a difficulty

Whereas an optimist is a person who sees in every difficulty a task I think we have seen in Japan that if you see in every difficulty you have before you a task something to be done we can learn from the experience The densely populated countries less developed countries of Asia I think have very much to learn from the Japanese experience

However the other problem raised by the Japanese economic growth is a more difficult one How can we learn to handle the complicated problems of an affluent technological society? We must admit that we know relatively little of how to organize a technological society because progress in technology and in the natural sciences is far ahead of our progress in the social sciences so we must try to catch up with the technological development in our organization of society

If you go by train from Tokyo to Kyoto you see an emerging megalopolis full of industrial enterprises and crowded with human dwelling places and you ask yourself how will we in twenty years of time be able manage a society that is so densely populated and has so many sources of pollutions of accidents and of other complications of the modern society?

I think having this conference in Japan gives us a unique possibility to study, on the spot this transformation which is the real subject of any study of the future

## ORGANIZATIONS ENGAGED IN FUTURE RESEARCH

### ATHENS CENTER OF EKISTICS (Greece)

JOHN G. PAPAIOANNOU, *Director of Research, Vice President*

Rapidly growing interest in ekistics encouraged the non profit Athens Technological Organization to start ekistic research and educational programs in 1958 and establish the *Athens Center of Ekistics* in 1963 to foster a concerted program of research education documentation and international cooperation in all major fields related to the development of human settlements

Ekistics is not a discipline limited to certain aspects categories or types of human settlements but a science embracing all aspects of this subject in order to develop skills for the solution of the many problems involved in the development of mankind's habitat

The Athens Center of Ekistics has five divisions

**DIVISION ONE** Research Large scale basic research into the development of human settlements under a wide range of conditions Current major projects  
The City of the Future The Capital of Greece The Human Community  
The Ancient Greek Cities

**DIVISION TWO** Education Advanced training programs in ekistics

**DIVISION THREE** International Programs World wide contacts and collaboration international meetings the Athens Ekistics Month Secretarial services to the World Society for Ekistics

**DIVISION FOUR** Documentation Collection classification and dissemination of information related to ekistics

**DIVISION FIVE** Administration

Within the activities of the Athens Center of Ekistics the *City of the Future* Research Project is the one more directly future oriented *The City of the Future* project studies the largest scale of human settlements (the whole Earth) and is mainly concerned with long range future projections of urban development It postulates a new era of dynamic balance to be reached about a century from now

Ecumenopolis (a world wide urbanization pattern) following a megalopolitan era with more and larger megalopolises than the ones already emerging The approach tends to synthesize a considerable number of partial aspects into a total picture on the basis of an ad hoc evolved methodology

### PUBLICATIONS

The publications of the Athens Center of Ekistics available to the public com

prise journals bulletins and monographs as outlined below

**EKISTICS** Journal is a monthly periodical which first appeared in October 1955 as the Tropical Housing and Planning Monthly Bulletin. It changed its name to Ekistics in October 1957 and has continued to publish abstracts and original articles on the problems and science of human settlements. Subscription rates are

\$12 00 one year subscription

\$22 00 two year "

\$30 00 three year "

\$6 00 student subscription (one year only)

Single issues of the current and previous year are available for \$1. Other back issues may be obtained for \$2 per issue if still in stock.

The particular contribution of the Ekistics journal to scientists is that it contains apart from original articles a selection of up to date information pertaining to the development of human settlements from a variety of fields (social sciences economics cybernetics physical planning biology and others).

**Ekistic Index** is a monthly publication consisting of a list of cross referenced articles selected from six hundred periodicals from fifty countries. The selection is based on the interest of the articles to planners architects social scientists and others concerned with developments in the field of Ekistics. Subscription rates \$60 00 per annum.

**ATO ACE Newsletter**, issued monthly is distributed to the personnel organizations and other friends of ACE. It contains a brief outline of the activities of the Center during the month.

**ACE Monographs** A selection of monographs issued by the Center is published every year. These are available at \$5 00 each.

**Library Membership** is offered at \$85 00 per annum covering all ACE publications of the year.

12 issues of Ekistics and its two six month indexes,

12 issues of Ekistic Index

12 issues of ATO ACE Newsletter and

at least three ACE monographs

**DOXIADIS ASSOCIATES INTERNATIONAL** Consultants on Development and Ekistics. Although administratively totally separate from the non profit Athens Center of Ekistics this Organization stands in close scientific collaboration with it. Since its establishment in 1951 Doxiadis Associates has grown from a group of architects and engineers dedicated to the discipline of Ekistics to one of the largest consulting organizations in the world with activities spanning the whole spectrum of development and especially the human settlements. Doxiadis Associates has worked in 35 countries in all continents and currently maintains a dozen branch offices in various countries.

**DOXIADIS ASSOCIATES COMPUTER CENTER** A self contained organization working in close contact with both the Athens Center of Ekistics and Doxiadis Associates. It possesses a Univac 1107 computer (the largest in Greece) and a highly qualified team of specialists in systems analysis computer programming and software and connected fields.

**TECHNICAL COLLEGES** Established since 1958 at the junior college level within the non profit Athens Technological Organization they have grown from a student population of 260 to 2 500 now in the fields of decorative arts graphic arts restoration of works of art draftsmen technical assistants for civil engineers accountants secretaries technical assistants to surveyors technical assistants for car repairing etc.

**Address** The Athens Center of Ekistics 24 Strat Syndesmou Street Athens 136 (P O Box 471) Greece. Telephones 623-216 623-227 623-373

### CENTER BERLIN FOR FUTURE RESEARCH (W Germany)

FRITZ LIENEMANN *Staff Director*

The Center Berlin for Future Research (ZBZ) was set up in early 1968 as a registered association with the following objectives:

to contribute to the growth of a well informed society by visualizing trends and possibilities

to provide decision making bodies with information and assistance in order to enable them to better perform their role in politics administration research and economy

to foresee possible developments of society in order to take advantage of them in a timely fashion and/or to avoid possible dangers in time

The staff of the ZBZ itself is not and is not intended to be very large. However scientists and experts of all disciplines living in Berlin and the Federal Republic of Germany are called upon to meet in working groups to discuss specific subjects as they come up. Mid 1970 the following studies have been completed:

1 **System analysis aids for decision making in politics**

This study has attempted to apply the methods of system analysis to the political area. (Excerpts of the report appeared in *analysen und prognosen* no 4)

2 **Structural developments in the economies and societies of single countries and groups of countries**

The purpose of this study was to construct a model which reflects the development of economic and social structures, clarifies and summarizes individual developments. Since this is a very extensive subject the initial efforts were directed towards the standards of living and testing the methods envisaged in connection with that problem. (Shortened version in *analysen und prognosen* no 8)

3 **Feasibility study for organizing an "Institute for Old Age Problems"**

This study proposes alternative finance plans and the appropriate organizational structure and development pattern for such an institute.

4 **Construction of a simulation model for the study of structural changes in urban areas and conception of a community management system (with examples for West Berlin)**

This project is designed to reveal the most important factors of economic



and social development in a city and their interrelations over a fairly long period. In addition, unexpected future development trends will be discovered by means of a simulation model (under various conditions) and used to provide information as a basis for political decisions.

5 **Methods for developing preferences concerning R & D activities on national level**

This study deals with the compilation and evaluation of most important methods for setting priorities in national R & D activities. One of the main items is the problem of setting and updating goals, furthermore to make sure that the goal patterns are such that the dynamic behaviour can be illustrated.

At present the following *working groups* are active and concerned with the subjects

1 **Urban development**

In this working group the development of settlements is analysed from various points of view with the intention of developing recommendations for appropriate policies. The group is concentrating on evaluating indicators for the attractiveness of cities.

2 **Research on old age**

The problems of research on old age are to be analysed in interdisciplinary discussion groups. One of the main aspects is to connect the medical, psychological, social and economic aspects of the problems of old age.

3 **Technological Innovations**

The channels and mechanisms of the diffusion of technological innovations are to be studied. The special purpose of this working group is to develop an action oriented manual as an instrument assisting the innovation policy decisions of the government.

4 **Simulation model for national education systems**

Here we try to show the possibilities and consequences of constructing alternative national education systems consisting of basic schools, universities, special schools, a.o. and giving the student the possibility to enter and leave the system any time he wants.

5 **Center for science and technology**

This working group wants to study the feasibility of a concentration of all scientific and non university technological research activities into one building complex. Such a center could be advantageous for several institutions by providing good services (computers, laboratories, conference rooms, a.o.).

**Name of sponsors**

- 1 Systems analysis aids for decision making in politics  
Responsible: H. H. Koelle  
Sponsored by: Department for Foreign Affairs, Bonn
- 2 Structural developments in the economies and societies of single countries and groups of countries  
Responsible: H. H. Koelle  
Sponsored by: Federal Chancellor's Office, Bonn  
Federal Ministry for Economic Affairs, Bonn  
Council of Europe, Strasbourg
- 3 Construction of a simulation model for the study of the structural changes

in urban areas based on the example of Berlin (West)

Responsible: H. H. Koelle and R. Mackensen

Sponsored by: Senator for Economic Affairs, Berlin

4 **Study for Organization of an institute for questions concerning old age**

Responsible: H. H. Koelle and H. Klages

Sponsored by: Senator for Labour, Health and Social Affairs, Berlin and Federal Ministry for Inter German Relations, Bonn

5 **Methods for developing preferences concerning R & D activities on national level**

Responsible: J. Bommer and H. Klages

Sponsored by: Federal Ministry for Education and Sciences

**Conferences and Seminars**

The ZBZ organized a series of conferences in cooperation with other institutes. **Priorities in Future Research**: Panel discussion. Senior civil servants and experts in future research took part in this meeting held in Berlin 1968.

**Basis of science in a changing society**: a series of conferences in cooperation with the Lessing Hochschule and the Technical University of Berlin in 1968.

**Mass Media as agents of future orientation**: In autumn of 1969 the Sender Freies Berlin (Radio Broadcasting and Television Corporation) installed an International Television Competition for TV Movies concerned about the future with a Prix Futura. On occasion of the performance of the films which were competing for winning Prix Futura an international conference on the role of mass media was arranged by the ZBZ.

**ZBZ Discussion circles**

Beginning in 1969 four quarterly sessions dealing with various topics were arranged. They were partially broadcasted by the RIAS Radio station.

**Membership**

At present the ZBZ has 160 Members. You can become a member only on the condition of having scientific qualification. The ZBZ does not want to become a mass organisation. The goal is to tackle urgent problems in decision making. The Members should be able to spend a certain part of their spare time for the activities of the ZBZ. For this purpose for each topic so called working groups are constituted in which the basic features of the work to be done are discussed by experts. The composition of these working groups is interdisciplinary. These working groups have two functions:

- 1 To assist the full time research teams in questions of special difficulty
- 2 To discuss broader themes and to try to operationalize the results of the discussions in order to get problem definitions which have a fair chance of getting financial support for further research activities

**Research teams**

The research work is done by full time teams of scientists—self-evidently interdisciplinary. In the Berlin Simulation team e.g. there are represented sociology, economics, business management, social economics, political sciences, engineer

ing mathematics statistics architecture city planning economic engineering computer programming

#### Board of trustees

Until now all money for the research work comes from public authorities. Herein great dangers can be found especially the danger of doing only instrumental or technocratic future research according to the interests of the government. In order to avoid these dangers the ZBZ has a board of trustees which controls the board of directors and which has to set up terms of reference for the policy of the Center. This board of trustees consists of 22 persons with very different points of view and backgrounds.

#### Publications

*analysen und prognosen* —uber die welt von morgen bimonthly (with 1/3 of the articles in English)

#### Address

D-1000 Berlin 31 Hohenzollerndamm 170 Tel 87 57 83

**DREXEL UNIVERSITY**—Center for Urban Research and Environmental Studies (U S A )

ANTHONY JAMES PENNINGTON, *Associate Professor of Electric Engineering*

We are interested in the zone between thought and action. That is translating over into the real world and both contributing to it and learning from it.

The work that I am going to describe has been partially supported by a grant from the U S Space Agency NASA devoted to technology transfer. This is part of NASA's obligation under the law to explore the applications of aerospace technology for peaceful purposes. The title of this grant is *Research and Education on Management of Large Scale Technical Programs*.

Some of the things that we have investigated there are as follows:

- 1 First urban simulation gaming the use of role playing games based on computerized models for several purposes. Briefly what we are looking for is not a further exploration of aerospace technology as such. Not a further exploration of social problems as such but the development of new mechanisms which can link the world of technology and the world of society or human need. We feel that simulation gaming offers one possibility for doing this.
- 2 A second activity which is a continuing thing is a seminar on technology and society. The orientation of this seminar for Drexel students is to deal with the underlying philosophy and psychology of technological activity and the questions of the prediction and control of the direction of technology. During the past year the discussions and readings involved books by Galbraith, Fromm, Ellul, Asimov, as well as others.
- 3 A third activity briefly is a design project course for Drexel students which

gives them an opportunity over a six month period to do a complete feasibility study of an urban system. In the case of the current year projects selected by the students is to study the feasibility of developing a combined dormitory/residential/commercial complex for West Philadelphia and this includes dealing with the political, social and environmental financial problems as well as the technical problems, the use of new building technology and so forth. We are optimistic that this study will produce some useful results that can in fact be implemented.

A few more words about the urban simulation gaming which has been the main thrust of our research. We have developed a game called *Build* which is oriented toward community development which is computer based and which is operation in the sense of roles in the urban environment having been defined. Real people have an opportunity to play these roles, make decisions, negotiate decisions with one another and see the results according to the computer model in effect at the time. One of the features of our approach is to subject the computer model itself to continuous challenge by the participants, not to regard it as something that is isolated and inviolable and we are looking of course for the use of more and more sophisticated modelling techniques including the use of industrial urban dynamics approaches of Professor Forrester of MIT.

For us the uses of urban simulation gaming are as follows:

First is an educational resource for both students and people in the community to become aware of the complexity of urban decision making and to develop skills in negotiating out decisions when there is a conflict over scarce resources. Second as a research tool for studying the negotiation process of various groups, affective changing the role of negotiation on the success of the venture and the definition of fundamental value positions that various participants bring to the game.

And finally we hope that in the distant future, maybe not too distant, that simulation gaming including our approach to it can be used as a mechanism for participative planning of the urban environment that is as a method for dealing with the great technical complexity that exists in urban decision making and with the great conflict in values and goals that exist in the various sectors in the urban scene. Now I think you all know that gaming has a long history starting with military gaming and going through business gaming and of course there are others in the U S who are working in urban gaming. More information will be gladly furnished on those activities to anyone who is interested.

I would like to conclude by saying a brief word on some of the things we would like to do in the future in collaboration with others. These are very ambitious projects, ones which would necessarily require the cooperation of a number of other people, so I am really proposing these as ideas for research. First Professor Arthur B. Shostak of Drexel has written a proposal to study the efforts in the U S and Japan to radicalize the working class. His initial work was devoted to life style of the American working class and this proposal would go beyond it by doing a comparative study in Japan. I would be very interested in talking with individuals here from Japan about this proposal. The second thing we would like to be able to do in collaboration with others throughout the U S and perhaps internationally is to become part of a more or less continuous network which operated on a simulation or possibly a delphi type basis to continuously

deal with national problems priorities regional planning etc The technology for implementing such a thing is quite readily available in the form of time sharing computer terminals at relatively low cost which can link up people all over the U S at least in a very low cost fashion through a network system that is not requiring long distance phone calls and as I said we would like to become part of such a network if there were one or two to help develop one since there isn't any And finally we hope to considerably restructure the educational experience for our own students There has been a lot of discussion and there will be at this meeting along those lines I have written an informal paper on this point which I would be glad to share with anyone who is interested

### **FUTURES—Journal of Forecasting and Planning (England)**

G F STREATFEILD, *Assistant Editor*

The October 1967 edition of *Science Journal* was devoted to future research The immediate and enthusiastic response to this issue all over the world was a pointer to the fact that there was an expanding and reasonably cohesive discipline subject area that could be loosely labelled Futures Research and was internationally recognised as such

The recency of this issue is quite surprising—especially in view of what was said in the guest leader by Robert Jungk It offers to wider and deeper discussion a branch of knowledge which has up to now gained little public and almost no academic recognition (I am not) aware of a single reputable scientific publication or professional association specifically dedicated to this immensely influential branch of intellectual activity

The futures issue of *Science Journal* was therefore in many ways a milestone It contained articles by Erich Jantsch Olaf Helmer Hasan Ozbekhan Gabriel Bouladon Herman Kahn Robert Ayres and others whose names and writing have received widespread attention over the last 2–3 years It must have introduced the subject to a very wide audience who had either never heard of forecasting or who had only done so because of some specialised interest It should be noted that although the issue was heavily overprinted it soon sold out and back numbers have become like gold dust

It was natural that this response should trigger off ideas for a special publication in the field A quick look round the literature revealed as Robert Jungk indicated an amazing paucity of regular publications In France there was the very notable exception *Analyse et Prevision* and in Washington USA there was the very useful Futurist newsletter There was obviously an information need—a challenge to the new and very small subsidiary company of the International Publishing Corporation Iliffe Science and Technology Publications *FUTURES* was the first new title to be published by this Company starting in September 1968

The research for the journal although sparked off by the success of the *Science Journal* issue was based on the approach and coverage of the first International Future Research Conference held in Oslo Our research editor was there

and many of those who now advise us were participants

### **Policy**

It is almost impossible to make in any comprehensive way a rigorous definition of *FUTURES* editorial policy though we do have a clear idea of where the information needs lie But it can be said that we attempt to draw together in a strictly useful and action oriented way articles and information on the methods and practice of long term forecasting and futures research so that all those involved in planning and decision making in government industry or as an academic exercise are made aware of the long term perspective and on going work in the field of futures research

### **Readership**

This policy in a sense forces a demarcation boundary around the sort of subscriber we are likely to attract to *FUTURES* The fact that the journal is not supported by advertisements and that it relies entirely on the discretion of the editors and the demand in the subject area for its contents and coverage have meant that it cannot be produced with the economics of a typical bookstall magazine hence its comparatively expensive in price I think it is fair to say that its respectable and academic appearance lends weight to a subject that runs the danger of being accused of charlatanism and fun and games

There has been no recent precise breakdown as to exactly what categories our subscribers come under But it would be fairly safe to say that well over half of our copies go to firms and about 10–20% to government departments Our university and institution subscribers are a growing section while individual subscribers for whom there is a reduced rate are comparatively few Over two thirds of *FUTURES* go outside the UK of which the majority go to the USA but there is a strong and growing readership in the continent of Europe particularly in Scandinavia

### **Editorial Functions**

*FUTURES* is published at Guildford England where there are two executive editors Trevor Warren Managing Editor and myself Assistant Editor We are assisted by an editorial advisory board who although they have never actually all met in one room do get and suggest articles and recommend editorial policy Otherwise our news conference and books sections are filled with information gathered and submitted from and through our various contacts who increase in number as we become better known Also since last June we have been proud to establish a formal link with the Institute for the Future in the USA This link in no way inhibits editorial policy or precludes contact with other organizations but it does provide us with a formal link with a centre of excellence We on *FUTURES* are very fortunate in that the IFF appoint an American Editor for *FUTURES* who is Professor Henry David

The firm base of a successful journal in such an exciting and expanding field of interest as this one suggests even demands the editors to look beyond a mere quarterly publication and we are looking very seriously at new ways in which we might be able to use the knowledge we have and the reputation we have achieved in the futures field

### The Journal's Contents

The contents of any issue will show the balance of material that we like to keep. We tread a careful line between what is standard short term economic forecasting and what is faddish and irrelevant. We try to take account of the latest developments in social and technological forecasting while not neglecting the intuitive and philosophical approach.

*FUTURES* also has a magazine value in some of its feature columns—The Pattern of Prediction—a series of articles on yesterday's predictions by I F Clarke. Speculations in the Hard and Soft Sciences by I J Good and Science Fiction Survey by Dennis Livingston. There is also a considerable element of topicality in the information sections witness especially the letters to the editor in the last issue.

### A Proposition

Of course *FUTURES* and the Company that publishes it are commercial endeavours but our business managers and particularly we as editors can scarcely be untouched by the possible value that a responsible contribution to the field of futures research of all our futures our journal and related publications can have and we would therefore like to remind you that communication is a two way business—we need to know to tell others—and would therefore greatly welcome from all your information and ideas.

## FUTURIBLES INTERNATIONALES (France)

P MENKE GLUCKERT

Mr de President Mr Chairman ladies and gentlemen unfortunately Bertrand de Jouvenel who is supposed to be here because of the breakdown of the proposed charter flight could not make personally this presentation and I regret very much that he as one of the pioneers of futures studies can't be here and being one of the Vice Presidents of the *Futuribles Internationales* I'm here to speak for him.

The *Futuribles Internationales* and the *Maison Internationale des Futuribles* are the Center for future studies of the francophone world. I might say for ten years by now. And the *Futuribles Internationales* and the new open house for future studies in Paris 52 rue Saints Peres are at the same time a focus for future studies in Europe an information center for all studies research projects and publications in the field and also an open house for conferences seminar and exchange of thought. I am asked to make an open invitation to everyone being in Europe to come to the *Maison Internationale* Paris. He can have office accommodation he finds conference rooms library and many useful contacts through our research centers in Europe. I would be especially grateful if some of our Japanese friends here could come to Europe to see us and to work with us.

The *Futuribles Internationales* are actually the first international association for future studies founded in 1960. In 1967 a new association with a new charter was established and in December 1969 the president of this association Interna-

tionale *Futuribles* selected Pierre Masse former Commissaire general du Plan and now the President of Credit Lyonnais Vice presidents are Daniel Bell Commission on the year 2000 Pietro Ferraro *Futuribili* Italy Andrew Shonfield from the United Kingdom (Committee for the next 30 years) and myself.

The general secretary is Helen de Jouvenel who is some sort of the engine and heart of the whole *Futuribles Internationales* and she helps so many of us and we all are also sorry not having her here.

The *Futuribles* is a term introduced by Bertrand de Jouvenel which means possible alternative futures or to say in other words the framework for discussion and confrontation and I think this very pragmatic down to earth approach used by this group is one of the best ways to study the futures avoiding all the pitfalls mentioned yesterday by Professor Etzioni.

Some of the activities and I can't mention all of them are the following. Most important of all the publication of *Analyse et Prevision* which for all scholars and interested researchers in this field is a very useful source of information especially on all European activities giving a documentation of all the work done in the office for regional planning and urban management *l'ourenagement du territoire* the demographic studies the long range and the short term economic forecast. Then an inventory of activities in research centers was prepared for the Council of Europe which is now available at the Council of Europe publication. A series of conferences and seminars on various topics especially in the field of interplay between decision making and advice by the social sciences range with many French and European groups the *Futuribles Internationales* published the book *langage de la prevision* the language of forecasting the author is Francois Hetman a colleague of mine in OECD. This book will hopefully be a basis for a standardized number of terms and definitions in the field of futures studies. Translations are in preparation. This is the first step I think to bring some system in this very broad new field. There is a distinction between methods futures description and the field of the transfer of future ideas into the decision making process and all must be treated differently and having different approaches.

One of the important activities of *Futuribles Internationales* and the *Maison Internationale des Futuribles* is to prepare specific conferences. In 1972 the *Futuribles Internationales* should like to have in Paris a conference on social policies. And this conference and perhaps a similar conference will be arranged in *Futuribles Internationales* independent from world congresses and general conferences giving a survey of the state of the art in the field because *Futuribles Internationales* feel very strongly that it is necessary to have some specific conference on specific topics. One of the fields which is very important is the problem what are social policies in different countries what are the methods existing to find social indicators to measure social progress and it is hoped that by confrontation of different methods used in different countries it will be possible to have new light in this difficult field of social policy. *Futuribles Internationales* especially hope that this Kyoto Conference can present new systematic views structuring future studies and reviewing the results obtained. All policies of today were adopted in the past and this will be most relevant to social measures. We need policies adopted by measures taken from the future.

If there are further questions I am glad to answer them. The office of *Futur*

ibles Internationales will also be 673 6th Floor which is also the office of OECD  
Thank you Mr Chairman

**FUTURUM** International Periodical for Future Research (W Germany)  
JUTTA MATZNER (Miss) *Managing Editor*

FUTURUM was conceived at a time when it was already commonplace for the future to be planned. Mankind—for the sake of its survival—can no longer afford to go staggering in an unplanned way into the future. The central question is how it has to be planned and to what ends. The alternatives are whether the planning will only be concerned with technological possibilities to which man must be adapted or whether these technological possibilities could be channelled in a way that man becomes the master of his future. As the answer to these alternatives can only be that any form of technological manipulation should be avoided, FUTURUM would like to be considered as a part of this worldwide struggle for emancipation.

The concept of the periodical was originated by its editor **Ossip K Flechthem**, who as early as in the nineteen forties coined the term Futurology and for whom future research has always been associated with the political goal of establishing a democratic pluralistic and socialist world.

The international and interdisciplinary **editorial board** demonstrates the political and scientific spectrum of *FUTURUM* to mention but a few: Pierre Bertaux (Paris), Erich Fromm (Mexico City), Johan Galtung (Oslo), Robert Jungk (Berlin), Leszck Kolakowski (Oxford), Lucio Lombardo Radice (Rom), Michailo Markovic (Belgrad), Peter Menke Glueckert (Paris), Alexander Mitscherlich (Frankfurt), Arthur J Waskow (Washington D C).

The aim of *FUTURUM* is to initiate a critical dialogue between natural and social sciences, politicians and a critical public in order to enable all who wish to become involved in participatory futurology.

Whereas until now *FUTURUM* has been published by a relatively small publishing house, the periodical recently has been taken over by **CARL HANSER VERLAG** Munich. This fact promises a much greater influence than before. Starting with the next year, the size of the periodical will be increased: instead of now quarterly with a size of 160 pages, *FUTURUM* will be published bimonthly with 120 pages and the price will be considerably lowered. By now we start occasionally printing articles in English language.

The general structure of the periodical will on the whole remain the same. First there will be three to four essays followed by reports on actual research contributions that are open to discussion and broad documentation on future research institutions and their activities. At the end of each issue there will be rather detailed book reviews. But this is by no means a rigid arrangement.

The first issue of *FUTURUM* was edited in 1968 with contributions among others by Ossip K Flechthem, Johan Galtung and Richard F Behrend.

The second issue is a remarkable one for two reasons. Firstly this was an issue focussed on one distinct topic and we intend to make increased use of this edito-

rial principle for the forthcoming issues. Secondly and this is more important there was inaugurated a dialogue between Eastern and Western futurology—if a classification of that rough kind is ever permitted. The occasion was given by **Marianske Lazne Conference (CSSR)** in April 68 which was concerned with the general theme **Man and Society, in the scientific technological Revolution**. The outstanding essays of **Radovan Richta**, the late **Ota Klein** and other members of the **Interdisciplinary Team for Research of Social and Human Relations of the Scientific technological Revolution** were published by **FUTURUM**.

It seems to me that in these contributions technology and socialism were discussed in a way which tried to avoid the annoying tendency of recent sociological and political theories on convergence. The papers did not maintain that both capitalist and socialist systems were converging toward a common industrial society which would ignore the variety in the politico economic bases of both. Rather these essays insisted on the difference between the two systems concerning potential development towards a planned democratic and virtually emancipated future society.

Later on there were published some fundamental contributions to e.g. methodological problems, planning of education, problems of nutrition, of peace research, problems of conflicting tendencies within late capitalism and so forth. The first two issues of this year contain contributions by **Sebastian Herkommer**, **Helmut Krauch**, **Bart van Steenberg**, **Arthur J Waskow** to name but a few.

In late summer there will come out a thematically focussed issue on **Conflict and Peace Research** with contributions by **Theodor Ebert**, **Stephan Leibfried**, **Malvern Lumsden**, **Dieter Senghaas**, **Fritz Vilmar**, **Peter Weingart**, **Lars Dencik**. We shall try to avoid any restriction to the mental and politico economic status quo as the grounds of technocratic crisis management. Instead our analysis will be concerned with the causes of military expenditure and political competitions of the great powers of our days with the question of theories of aggression as well as with methodological problems of **Conflict and Peace Research**.

A final and perhaps provocative remark. The motto of this conference is **Challenges from the Future**. Although this theme has on the first glance some plausibility it seems to me that it has to be reflected in a very critical sense. It could be easily taken as an objectified even petrified prolongation of existing social relations which stand up against us as unquestionable assumptions. This is true in all cases of a technocratically disguised maintenance of man's domination over man. There is no doubt to me that future challenge is above all a social one and moreover that this challenge is embodied in the present.

#### Address

**FUTURUM, International Periodical for Future Research**, edited by **Ossip K Flechthem**, *Managing Editor*, **Jutta Matzner**, *Editorial office*, 1 Berlin 41, **Lutherstr 12**, Tel 792 36 12 (Federal Republic of Germany)

**FUTURE LIBRARY** contains all issues of **FUTURUM**

## HARRY S TRUMAN CENTER FOR THE ADVANCEMENT OF PEACE (Israel)

YEHEZKEL DROR

First let me try to put the activities of the Harry S Truman Center into the framework of increasing interest in work related to the future in Israel—an interest that is expressed mainly by the following recent activities

1 The establishment of the Israel Society for future study represented here by Professor Mushkat and Dr Landau

2 The recent conference in Israel on technological forecasting and futures studies in which two participants of this conference served as main speakers Dr Lindstone and Herman Kahn

3 Work that this speaker did for the Prime Minister on establishing an Israeli Institute for Policy Analysis in which futures study will be directly related to Israeli policy issues

Activities of the Harry S Truman Center are different from those of other institutions. Its activities are designed to make a contribution to the advancement of peace. A small contribution it may be but hopefully an important one.

Its director is Professor Julius Stone, a very well known international expert in law and jurisprudence. The Center was established about three years ago and it is now in the process of crystallizing its activities. As there are so many distinguished institutes in the world working on similar issues, there are some problems in defining the specific advantages of the Harry S Truman Center. One set of criteria includes availability of personnel, availability of local experience and significance of issues.

The main areas of study of the Truman Center have been defined as follows (some of them are universal subjects, some of them, as you will see, are quite neglected by a number of other institutes)

There are five main areas

1) Social conflicts. Here at the Truman Center we try to focus on activities in Africa and Asia in which Israel is well equipped with material and experience.

2) Peaceful fulfillment of the needs and aspirations of developing states. This includes studies of population, urbanization and agriculture. The feeling is that in order to advance a course of peace in a developing country, one cannot discuss a political issue without going into the economic infrastructure of tension.

3) A somewhat unique area which includes normative standards critical for peaceful change and deals with the questions of reform of law and especially international law.

4) Technical issues which include techniques of abatement of tension and conflict, arbitration, mediation and so forth.

5) A somewhat particular area on ethical and religious experiences with special attention to the impact of different metaphysical systems of the abatement of conflict and advancement of world peace.

The modes of operation of the Truman Center includes sponsored studies by

local and international teams, invitation of scholars to spend time at the Truman Center and at annual conferences.

The first conference which took place in 1968 was devoted to agricultural development for the advancement of Middle Eastern nations.

The second conference which took place in March 1970 was devoted to technical assistance and development aid.

The next conference will attempt to illustrate the efforts of the Truman Center to work up a particular approach in which we deal with the relationships between religious experience and peace.

## GERMAN SOCIETY OF FUTURE RESEARCH (Switzerland)

BRUNO FRITSCH

First I should make a short comment with respect to the German Society of Future Research.

Following the Oslo conference we have found that the German speaking part of Europe which is covered by three states was badly represented. This gave rise to the formation of a German group in 1967 which actually was the first one. This has been followed by a formation of the Swiss Society for Future Research in March 1970 and is being followed by a formation of an Austrian Society for Future Research.

All these three groupings have basically the same goals.

Firstly they want to provide a framework of cooperation and exchange of information for all people and groups interested in future research.

Secondly they want to provide guidelines for policy decisions for the respective governments.

And thirdly they want to initiate future systematic research in various institutions both in existing and in new institutions which will be founded. Our work has been focused around nine groups of problems which may briefly at least be mentioned.

The first group is concerned with providing a basis for data collection, data storage and retrieval. We have also worked on new criteria for social indicators. We are collaborating with the Paris group of experts which is dealing with the new definition of national accounts. We have also done some work under the guidance of Professor Klages on a new system of indicators of social change. This is basically the first group of work dealing with the statistical criteria of research.

The second group is centered around peace research. I may mention that there are several groups in Germany, unfortunately they are not yet sufficiently coordinated. Anyway, as far as the German Society for Future Research is concerned, we did not have very much contact with these different groups. In Switzerland there is an institute on peace research in preparation and the government has made extensive studies in this field. In any case, peace research has been supported very much by the declaration of the President of the Federal

German Republic who in his inauguration speech has stressed the importance of peace research

The third group of activities is centered around economic and technology problems growth policies and technology For that purpose a new institute has been established in Hannover another is already in the stage of preparation in Switzerland

The fourth group which we have been dealing with is administration Administration and budget planning organization of government decisions and policy

The fifth group deals with labour and automation especially in relation to employment and the very important problem of participation We have realized that there is an urgent need of analysis resulting from the possible contradiction between the problem solving procedures on the one hand and the participation desires on the other

The sixth group is centered around education Again here we have some representatives from Germany especially Professor Widmaier who was involved in some expert work for the German government on new forms of education

The seventh group is centered around habitation and environment especially city building

The eighth group deals with leisure

The ninth with society and social innovation There again we are mostly interested in the democratization process and in finding a broad basis nationally and internationally with the people participating in the new futures There have been some very interesting experiments

I may as well mention the institutional basis of these working groups First the Institute for New Technological Trends has been established It works as far as technologies are concerned in Hannover As far as the economic aspects are concerned the work is done in the Hamburg Institute for International Economics

Further the Institute of Professor von Weitzsaecker was set up It has been established in Munich and deals with methodological questions of future research

Thirdly we have the Center for Future Research which is located in Berlin headed by Professor Koelle and also under the directorship of Professor Klages who is present here

Prof Koelle in Berlin has suggested to the German Government a network of institutes around these nine groups His plan has been presented here and does not require repetition

This is the present stage of affairs We are not bound to any national interest we are eager to have international cooperation We do not want to be involved in any ideological quarrels that is to say we work on practical problems and are trying to get solutions on the basis of competent research We are aware of the fact that these results can be obtained only on the basis of competent personnel which may require financial means greater than the governments are prepared to spend

## INSTITUTE FOR THE FUTURE (U S A)

SELWYN ENZER, *Research Fellow*

The Institute for the Future is an independent research organization founded in 1968 as a non profit corporation for work solely in the public interest It is the only organization in the United States dedicated exclusively to systematic and comprehensive studies of the long range future Such studies cover many topics with the notable exception of classified military planning the Institute will consider prevention of warfare prevention of conflict and the like but it will not engage in studies directly supporting military activities The Institute is still small but growing steadily with a full time staff that will soon number 40 It is also supported by a fairly extensive list of consultants now numbering into the hundreds

The work of the Institute is operationally oriented based on the assumption that there are many alternative futures the realization of which man can influence by conscious decision and appropriate action We at the Institute seek to derive substantive insights from each individual study we perform in order to gain an increasingly comprehensive overview of the ways in which activities in one sector of society or technology can affect other sectors By this means we hope to contribute to the realism with which decisions can be made and actions planned

Since our chief goal is to support more effective decision making we strive to develop techniques that are highly objective and general applicable to many specific problems Anyone on whose behalf such techniques are used can provide his own substantive inputs and objectives then evaluate the outcome by his own criteria These techniques help avoid the danger that the researcher's biases and prejudices might influence the decision making process he is trying to assist The methodologies we have been emphasizing include Delphi cross impact decision trees and simulation techniques in addition we are presently looking into the application of several parametric and non parametric statistical techniques for analyzing and validating our findings

Briefly the following are some of the activities in which we have engaged grouped according to the type of sponsor for each activity

For industry we have completed a study involving the future of employee benefits particularly in the United States but with some attention to international considerations as well We are looking into the future of plastic materials and some of the materials that may compete with plastics We are conducting investigations into the future of communications in the year 2000 and into the future of newsprint topics which plainly are interrelated We are examining the possible futures for residential housing in the United States In addition we have a number of clients whom we assist with corporate planning on a continuing basis

For universities and foundations we have undertaken studies on the future of education particularly for the Educational Policy Research Center at Syracuse University We are looking into the methods of forecasting the diffusion of technologies for the National Science Foundation We are laying the groundwork for reports on the future state of the Union under a grant from the Russell Sage Foundation We have developed an urban simulation course using some of our

techniques and are teaching that course at Wesleyan University. And we are trying to assist a medium sized foundation in planning the allocation of its resources.

In the way of government activities we have done a fairly substantial study for the state of Connecticut looking at issues and opportunities that the state might face in the next thirty years or so in light of likely scientific and societal developments. We are currently assisting another state agency to develop yard sticks or measures by which communities can create action plans responsive to their own needs. And we are doing a project for the NASA space program to identify likely technological developments that may represent potential constraints on future space missions.

Furthermore there are a number of very promising activities that we expect to start on very shortly. One is a study of future relations between business and society in the United States. Another deals with the economic loss situations likely to arise out of future applications of computers. A third is a simulation study to test state and federal science policy.

The Institute's research findings are published in the form of reports and papers. A list of these publications as well as a booklet describing the Institute in greater detail may be obtained by writing to the Institute for the Future, Middletown, Connecticut 06457, U.S.A.

### INTERNATIONAL PEACE RESEARCH INSTITUTE—OSLO (Norway)

JOHAN GALTUNG *Director*

Our institute was founded in 1969 and in 1966 started some work which has to do with future research. We were happy to be co-organizers of the First International Future Research Conference that was held in Oslo in September 1967. Our concerns for the future can be divided in the following five categories.

First of all we are of course mainly since it is a peace institute concerned with the future of the world system. We do this partly as a predictive study extrapolating from existing trends and trying to predict discontinuities, events in the future, but mainly as a prescriptive study trying to lay down what we think are criteria that should be applicable to the organization of the world as a system. In connection with this we published two journals: *Journal of Peace Research* which was started in 1964 and which now will be increasingly devoted to futuristic studies. Another one was started this year: the *Bulletin of Peace Proposals* which gives in excerpt form peace proposals put forward by establishment and anti-establishment by government and non-government, national and international anywhere in the world on on-going conflicts and more general conflicts. The bulletin also has an analytical section with analyses of these proposals. Our purpose behind that bulletin is to stimulate future oriented thinking in connection with the world system. This is a bulletin where East and West, North and South, at least co-exist typographically. And that typographic co-existence is for anybody to see at a very modest price. I might add

The second aspect of our research is participation in a major public opinion study concerned with the image of the world in the Year 2000. This study involves data collection from twelve nations in East, West, North and South, giving images of what the world would and should be like in year 2000. Countries outside Europe include Japan, India, and Mexico. Countries inside Europe span from Poland, Czechoslovakia, Yugoslavia, Spain, Netherlands, and to Britain and Norway. The study is now in the analytical phase and one presentation of the findings will be made at the International Sociological Association in Bulgaria. But I would immediately like to say that the study reveals, I think, not only lack of thinking and lack of depth in connection with the future, but also bewilderment, anxiety, uncertainty, fear, and pessimism. The country that of the twelve countries seems to take technology and science most for granted and to be least enthusiastic is our host country, Japan. There are findings in connection with that that I hope will stimulate research in other countries.

Aspect number three is a study in cooperation with the University of Essex of the whole utopian tradition. It is an effort to analyze the structural content of the Utopias suggested during the last 2,500 years. We are not interested in the psychology of the author or the sociology of his background, but we are interested in the psychological assumptions he makes about human beings and the sociological ideas he makes about social structure. Our feeling is that there are more good ideas to be gleaned from an inspired Utopia than from any amount of prediction studies based on the present.

The fourth aspect we are concerned with is tied to number three. It is an increasing interest in domestic future. Our concern with domestic future has brought about a small sub-section of the Institute interested in blueprints for societies after the post-industrial society. We see the post-industrial society as the end of something and we are concerned with what comes afterwards.

Our fifth point is a negative point. It has three sub-titles and it is concerned with what we do not do. Point one: we do not issue documentation and we do not coordinate with anybody except ourselves. Point two: we are not afraid of students and young persons. Point three: we are not a political animal, but we have a strong feeling that the future is concerned with politics, that it is basically concerned with power, that there is no such thing as a politically power-free neutral expert above everybody else. We think it is an honest bid for power and that we have to participate, we have to see which are the forces that contribute to the good future and which are the forces which do not contribute to it.

### JAPAN SOCIETY OF FUTUROLOGY (Japan)

YUJIRO HAYASHI *Chairman Professor Tokyo Institute of Technology*

The Japan Society of Futurology, sponsoring the International Future Research Conference here in Kyoto, is still a very young society. Born on July 6, 1968, it is not yet fully two years old. But it is a very unique organization in that it is the only nation-wide association in Japan for research into all phases of the future, both distant and near, with a view to exploring, on the basis of the scien



tific findings of all established learnings every kind of possibility which the future may offer us The prospectus for the establishment of the Japan Society of Futurology describes its uniqueness in the following terms

From the hoary past to the far off future time flows eternally In this flow of time man has lived *per excellence* as a future oriented being The future has always promised possibilities for man Man has never ceased to take up the challenge of these possibilities It was man who changed surrounding nature and created a new environment His foot marks are the history of mankind and to his achievements we give the name of civilization

At present too a future with a variety of possibilities is being unfolded before our eyes We must act to add still greater value to this edifice of civilization by predicting and exploring these possibilities Yet a close scrutiny of modern civilization reveals that the dangers germinating therein are numerous and grave Can not we detect beforehand these dangers to the future of man's civilization? Can not we work out effective means to prevent such dangers?

The future is of course uncertain It always has not just one but several possibilities The range between desirable and dangerous possibilities is almost limitless Moreover we must first identify criteria by which to determine what is desirable and what is dangerous As much as we recognize the importance of predicting our uncertain future we also realize an almost complete absence of academic preparedness for such prediction

During the hundred years since the Meiji Restoration Japan has achieved what took the western nations twice as long to do This has made changes in the social environment all the more rapid Furthermore given the small space and huge population as well as the traditional society and culture that had long been established in the nation Japan has been able to feel portents of change in their early stages All this indicates that it is about time for us taking the initiative among all nations in the world to start academic preparation for the prediction of the future There is no time to lose in these preparations In overseas countries too academic interest in predicting the future is rapidly gaining momentum

In order to create this new field of academic pursuit we shall

- 1 inherit the academic achievements and heritage of the established disciplines
- 2 promote free and creative thinking and spirits unfettered by conventional concepts
- 3 ensure cooperation among different disciplines and fields of learning for this purpose and
- 4 actively engage in a wide range of international contacts and exchanges

Through these efforts our predictions of the future will gradually acquire greater accuracy and we shall be able to know what it is that we have to prepare for the future The Japan Society of Futurology is established to explore the possibilities of such learning

Needless to say futurology is built on a synthesis of various sciences What this new science requires is a candid and penetrating cognizance of the existing situation as well as a free and fertile imagination Through international contacts and exchanges we shall be able to cross over not only the disciplinary boundaries of academics but also the borders between nations and races so as to explore the possibilities of the future on a truly universal scale

Faithful to this spirit in which the Japan Society of Futurology was born we now provide a forum for international exchange in the form of this conference It is indeed very gratifying to note that so many of us who aim at the same objectives are gathered here from all parts of the world north south east and west

As of February 1970 the Japan Society of Futurology had a membership of 251 In contrast to other academic societies with memberships of thousands it is by no means a large organization However the fact that its members come from all fields of specialization is a feature unique to our Society alone This makes it possible to place our future research in a very broad perspective as may be indicated by the following list of topics taken up in our past two national meetings

#### The First Meeting of the Japan Society of Futurology (December 7 1968)

##### Morning Session (Moderator Ichiro Nakayama)

- 1 Genealogy of Future Research in Japan Jiro Sakamoto
- 2 Current Situation of Futurology in the World Kenichi Kohyama

##### Afternoon Session (Moderator Yujiro Hayashi)

###### Common Topic—Role of Scientists for Future

- 1 International Relations Masataka Kohsaka
- 2 Economy and Society Zenichi Ito
- 3 Technology Junnosuke Kishida
- 4 Medical Science Kazuhiko Atsumi
- 5 Environment Atsushi Ueda
- 6 Education Akira Mori

#### The Second Meeting of the Japan Society of Futurology (March 26 1969)

##### Morning Session (Moderator Yujiro Hayashi)

Memorial Lecture Yohan Galtung (International Peace Research Institute Norway)

##### Afternoon Session (Moderator Hidetoshi Kato)

Special Topic—Methodology of Future Research and Basic Characteristic of the New Stage of World History Shigetaka Uchida

###### Common Topic—Future of Mankind

- Possibility of Spiritual Evolution Inherent in Man Kiai Fujioka  
 Future of Environment Keiji Higuchi

The very wide and broad perspective with which the future is approached as shown above is a distinct feature not only of the Japan Society of Futurology but of future research in general in Japan In other words we can say that it is a Japanese characteristic of future research

As society is more and more information centered it will have greater entropy so that it may approach ultimate unity However in the interim society will undergo a transitional phase of plurality In fact we have come to realize that there are some things distinctly American European Asian or for that matter that there are finer distinctions in the pattern of life structure of society nature of technology and even the sciences and learnings which have so far been considered free of such distinction This indicates that we should place greater emphasis on plurality than on unity

Futurology is no exception. Consciously or unconsciously our research into the future has acquired some features which are *per excellence* Japanese. And this is only to be expected for these are reflections of the Japanese characteristics built in our society.

In transition from an old to a new society Japan has not marked any clear cut stages of change but has undergone stages of overlap in which old and new elements co exist and intermingle with each other. In a word Japanese is a multiplex society. While somewhat nonchalantly retaining things old we are at the same time insatiable for things new which we absorb and digest within our old soil. This inevitably creates constant friction and confusion but the situation is normalized into regularity as time passes. However the normality thus attained has elements of restlessness that pave the way for another change.

The pace of change in the Japanese society therefore may be found to be either slow or fast depending on what is illuminated. Having these traits the Japanese society does not well fit Rostow's categorization of developmental stages nor can it be easily measured by the standards of western scholars. And this should be born in mind when we think of the future too. On the one hand the Japanese society is most susceptible to the challenges of the future but on the other the possibility is also great that its future will retain much of its past. This makes it necessary that our future research be placed in a very broad perspective because the nature of our future is of itself very wide and multiphased.

These characteristics of future research unique to Japan had already been articulated in those symposia organized by different associations before the Japan Society of Futurology was established.

The international conference on The World in 2000 held under the auspices of the Japan Economic Research Center\* from September 25 through 30 1967 saw the following reports by the Japanese participants.

Future of the World and Asia	Saburo Ohkita
	Akira Ohnishi
	Shinkichi Eto
Prospects of Changing Society in Japan	Kenichi Kohyama
Japanese Economy of the 21st Century	Jiro Sakamoto

These reports commonly asserted that a very broad approach should be taken even in discussions of the Japanese society of such a not too distant time as 2000. At least they all confirmed that the future of the Japanese society could not be predicted by a mere extrapolation of the present. With the participation of eleven foreign scholars (of whom three participated by paper presentation only) this was the first international conference in Japan on future research. There is no doubt that the uniqueness of Japanese future research was brought home to all the participants.

Immediately before this conference the Union of Japanese Scientists and Engineers organized the first symposium of futurology. A Start for Future

\*President Hiromi Arisawa, Chairman Saburo Ohkita, Chairman of Organization Committee of the Conference Ichiro Nakayama, Committee Members Ichiro Nakayama, Saburo Ohkita, Kenko Kimura, Kiichi Saeki, Jiro Sakamoto, Yujiro Hayashi and Takashi Mukaibo.

Research \* Because this was the first attempt of this kind and was participated in by Japanese alone Japanese traits of future research were all the more distinctly articulated as a glimpse of the following list of themes may show.

Direction and Location of Futurology as a Science	Yujiro Hayashi
A New Environment for Man (Futurology and Social Technology)	Kenichi Kohyama
An Anthropologist's View on Futurology	Euchiro Ishida
The Futurology of Man Machine System	Masamitsu Ohshima
Future Aspect of Space Physiology	Hisashi Saeki
Future Aspect of Urban Design	Noboru Kawazoe
Future of Information Technology	Zenichi Kiyasu
For the Technological Development after 10 Years (Future of Engineering Technology in Japanese Industry)	Junnosuke Kishida

The Union of Japanese Scientists and Engineers under the same organization committee held its second symposium Structuring Futurology from July 18 through 20 1968. In this symposium the focus of discussion was on a nearer future so as to aim at a sharper clarification of problems. Yet here again discussion inevitably ranged over a wide spectrum of problems as indicated in the following list.

Conditions of Future Prediction	Yujiro Hayashi
Education	Kikuo Nishida
Medical Services and Related Problems	Kosei Takahashi
Future of Resources	Noriyuki Sakikawa
International Relations	Masataka Kohsaka
Languages	Toshiyuki Sakai
Society in the Early 21st Century	Jiro Sakamoto
Business and Management in the Next Generation	Kazuo Noda
Special Lecture Integrated Prediction of Future and Management	Koji Kobayashi

It was just before this symposium was held that the Japan Society of Futurology was established. Two months later another association called the Japan Techno Economics Society organized Symposium 68—Perspectives on Post Industrial Society. This was an active season of future research in Japan.

In this symposium which was a joint US Japan gathering its sponsors defined the post industrial society in the following terms.

What then is this post industrial society we are discussing? What do we mean by these words? It is the essential transformation of technology in its conventional sense. That is to say it is assumed that giant science and giant technology both of which will play an ever greater role in our life and society will undergo gradual transformation resulting in the formation of a new social system in which the field of physical technology in its conventional classification is harmonized with that of metaphysical non technology. Furthermore it is assumed that our present society which has been based on the production of

\*Chairman of the Organization Committee Tosio Kitagawa, Committee Member Tosio Kitagawa, Masao Goto and Yujiro Hayashi.

materials as the basis of our civilization will gradually be transformed into a society based on the production of knowledge. This is how we view the situation.

This view of the post industrial society happens to be very close to the concept of technology assessment which has recently gained popularity in the United States. It is an interesting coincidence that this new phrase was coined in the United States at just about the same time as the above mentioned symposium was being held in Japan. This symposium took up the following subjects for discussion:

- The World of the 21st Century Junnosuke Kishida
- Information Centered Society Yujiro Hayashi
- Measurement of Knowledge and Technology Daniel Bell (paper presentation participation)
- How Technology Will Shape the Future Emmanuel Mesthene (Paper participation)
- Technological Innovation and Future Industry Noboru Makino
- Supra Technological Society and the Information Centered City Kisho Kurokawa
- Technology and Social Change Donald A. Schorn
- Pattern Dynamics Shoji Makishima
- Information Innovation Hajime Karatsu (Paper participation)
- Life Science and the Future Society Kazuhiko Tatsumi
- Information Innovation Nicholas Johnson

The symposium emphatically confirmed that the so called information centered society is not a mere computer society but is a much broader concept. It was pointed out that in order to realize the full implications of the information centered society it is important to understand the spirit of *ma* which has had an important role to play in the Japanese society.

In postwar America it has often been contended that the system approach and analysis can effectively be applied to social phenomena as well. As the new term technology assessment may indicate the system approach is being widely applied for practical purposes. It may be noted in this connection that Japan has developed more or less unconsciously a soft system of society as shown by the fact that Japanese society has from ancient times acquired a high adaptability to change thus developing as a multiplex society in which things old and new co exist. Therefore traditional values such as *ma* and *sabi* being the product of such a soft social system are in fact as much future oriented as they are traditional.

Since free economic activities have been the mainstay of postwar Japan long range planning by the government has not played a leading part nor has it much power to enforce implementation of programs. Yet the faster the pace of technological innovation and economic growth the more important will be the role of the government in maintaining an overall harmony in society. Stimulated by this circumstance methodological research of economic planning has made very unique progress in Japan reaching a level which is among the world's highest. Long range vision of the future society has also come to be frequently undertaken even if not as routinely as in France.

For example Long Range Prospects of the Japanese Economy published in August 1960 by the Economic Council is the first result of future research activities by the government in postwar Japan. On October 27 1965 officials of the Economic Planning Agency blue printed A Vision of Affluent Japan after Twenty Years the preface of which had the following to say: This work will have fully played the role assigned it if it serves to start the serious making and adjusting of different visions and policies oriented to the future of our society and economy. In fact this Vision functioned as a springboard for the later development of futurology. Though some attempted to call this document a White Paper on the Future this appellation is not necessarily appropriate because of the preliminary nature of its work.

A series of future research activities by government organizations followed and were made public. Future Life of the People—Vision of Twenty Years Ahead was published by the National Life Council on November 15 1966. On September 30 1969 the Comprehensive National Land Development Council announced a New Comprehensive National Development Plan with 1985 as the target year. A prize contest for papers on the subject of the 21st century was sponsored by the government and the Japanese Pavilion at the World Exposition devotes a large space to exhibits of 21st century Japan.

Despite the keen interest shown by the government however it is somewhat inevitable from time and other limitations that its future research has not become full fledged.

Let us return to the story of the Japan Society of Futurology. As noted before it was born in July 1968. The year 1968 marked the centennial of the Meiji Restoration and the government was about to carry out different events and programs commemorating the hundredth year of Meiji.

A hundred years ago Japan was in the midst of the agony of emerging out of darkness of night. In this anguish such young people as Ryoma Sakamoto and Shintaro Nakaoka had to meet violent deaths before the light of dawn was glimpsed. The dream they had of Japan's future was the dream on which they staked their lives. Japan as it is today after a hundred years of growth and development is probably a wonder surpassing anything they might have dreamed.

Much water has since flown under the bridge. And in 1968 when we built that small fortress of future research called the Japan Society of Futurology many emotions might have welled in the minds of old people looking back upon the course of the past hundred years but definitely not in the minds of the youth of our new age. To many of these young people the challenges of our new society are of much greater importance. And it is the task of the Japan Society of Futurology to meet these challenges.

#### KOREA INSTITUTE OF SCIENCE AND TECHNOLOGY (Korea) HYUNG SUP CHOI *President*

The Korea Institute of Science and Technology (KIST) for short is unique in Asia both in its scale of concept and in its scope of operation.

As I hope I will be able to illustrate for you KIST has very broad and important implications for our Republic. In reality we are engaged in a grand experiment bringing together new ideas men with special characteristics and facilities which are unique in our country. With these three elements we are endeavoring to build an enduring institution which will serve the technical and scientific needs of Korea. In so doing it will contribute in a significant way to the economic and social progress of our nation.

In simple terms KIST exists primarily to bring to Korea the benefits of world science and technology and apply them selectively for the benefit of Korean industry. In yet more specific terms this means the application of the skills and imagination of the KIST staff to the products of Korean industry. It is a self evident truth that a strong viable economy is fundamental to human welfare and the development of society.

There were a few important events which took place as a *prelude* to the start up of KIST. As you know President Johnson and President Park met in Washington in May of 1965. From this meeting came a determination of the desirability of establishing a new entity in Korea which would have as its purpose the application of science and technology to the development of Korean industry and the Korean economy.

Dr. Donald F. Horning, President Johnson's Special Assistant for Science and Technology, was then requested to lead a team of American scientists to visit Korea and explore the implication of the establishment of an entity of the nature envisaged by the two Presidents and to search out other significant aspects through discussions with appropriate representatives of Korean industry, academic society, and government. The Horning team's analysis and observation of the pertinent areas of the Korean economy and technology led to an affirmative conclusion for the establishment of an organization.

Following the Horning report of August 1965 it obviously became necessary to conduct a detailed study for the implementation of the project. This task was assigned to Battelle Memorial Institute of Columbus, Ohio. Their report, dated December 15, 1965, affirmed the feasibility and set forth in some detail an initial plan of operation by which the objective could be reached. Subsequently the Battelle Memorial Institute was designated as sister institute of KIST. Then the governments of Korea and of the United States entered into an agreement which resulted in the organization of the Korea Institute of Science and Technology in February of 1966.

So much for history. Let's examine a fundamental concept set forth as necessary for the establishment of this new center of science and technology in a developing country like Korea.

1. Autonomy of the research
2. Stability of the organization and
3. Adequate research environment in terms of facility, staff and workload.

Through extensive examination and careful comparison of various research institutes in advanced countries it was decided that the new institute in a developing country like Korea should be established as a not-for-profit independent incorporated framework that could serve the needs of government and industry without being subject to the political control of either. The maximum autonomy in research is a paramount requirement for the best creative activities. In recogni-

tion of this importance a special law, KIST Assistance Act, was promulgated which allowed the government to donate money and land to KIST but provided that the government could not audit KIST or exert approval power over its annual programs. This law was further amended in March 1967 to strengthen the autonomy.

Once the autonomy is assured then the stability should be sought. The natural tendency is that the organization is apt to be left alone if it becomes completely autonomous. During the early part of formative years KIST was like an infant just started to crawl; it was in need of strong government support until it could walk alone.

In order to assure the stability of the Institute the Korean and U.S. Governments agreed to support KIST financially during the first five years. Both governments also agreed that they would consult as to the further support of KIST if it does not become self-sustaining at the end of the first five years.

As of March 1970 the Korean Government has provided KIST with the endowment fund of 2 billion won, the equivalent of 6.6 million dollars—which was given to KIST for investment. The interest proceeded from the investment will help defray the operating cost of the Institute over the years. Research expenditures on the other hand are derived from the research contract with the government and industry.

In order to determine the environment in which the new Institute would function it was necessary for KIST to examine and review the industrial sector of the Korean economy. Such a comprehensive technical economic survey would make it possible for KIST to define the staff, both in numbers and types, which would be necessary for KIST. It was also necessary to determine what physical facilities, in terms of buildings and research equipment, must be acquired in order to have the necessary research tools with which the staff could work.

With the requirements for staff defined it then becomes possible to structure a recruitment program to acquire such staff. Then it's also possible to devise a training and orientation program which will bring that staff to a level of effectiveness.

From knowledge of staff requirements and from knowledge of the requisite buildings and research equipment, coupled with the objectives or program of the Institute, we derive the fiscal requirements for KIST.

As I mentioned it was necessary to look at the objectives of the program in terms of the Korean environment. And this called for conducting a rather comprehensive series of technical economic surveys which would provide the basic data and information needed for formulating the detailed plan.

The objective of the technical economic surveys was two-fold: first was to examine the present state of the art of the application of technology by Korean industry.

Secondly we wanted to know what technology Korean industry needs beyond what it now has, and also to project the evolution of these needs in the foreseeable future. In this way KIST could be forehanded and play a leading role in the future of industrial technology in Korea.

Participated by 80 pertinent specialists and economists, including 23 Battelle specialists, the survey team visited over 600 industrial plants and related organizations throughout the country.

The surveys were conducted in 16 different industrial sectors for the period of 8 months from November 1966 through June 1967. As a result of the technical economic surveys the major technical scope of KIST has been at least initially determined as follows:

- 1 Material and metallurgical engineering
- 2 Food technology
- 3 Chemistry and chemical engineering
- 4 Electronics
- 5 Mechanical engineering and
- 6 Industrial economics

With the technical scope of KIST's activities at least initially established attention could be turned to the question of staffing to meet these requirements.

Our investigations have shown that many highly qualified academically trained Koreans are available. But a shortage exists of those who have had the experience in industrial research which would suit them for positions in a contract research organization.

The sources of these trained Koreans are primarily Korea itself and the United States. Many of our nation's finest scientists and engineers have completed post graduate education in the United States and remained there. Thus Korea has faced—as much as any country—the serious problem of the brain drain.

You possibly can understand distinguished delegates that one of our very greatest concerns from the outset has been our ability to attract back to Korea those of our countrymen who have been educated abroad.

Realizing the discrepancy in salaries and various aspects of living conditions that exist between Korea and some of the other nations we all anticipated extreme difficulty in being able to provide sufficient inducement to these outstanding individuals to get them home.

With the help of Battelle Memorial Institute KIST sent recruiting brochures in early 1966 to some 800 Koreans abroad. Amazingly some 500 sent back letters showing their interest. KIST and Battelle screened the list and selected 69 candidates.

The applicants submitted their research proposals based upon the reports of the technical economic surveys of Korean industry that had been sent to them right after the survey. In June and July of 1967 I personally interviewed 25 leading senior candidates out of 69 candidates. Out of these 25 candidates to whom KIST extended formal employment offers 23 signed the contract to return to Korea to continue their interested research at KIST. In addition 20 senior scientists who had also completed their academic training abroad were employed within Korea.

Coupled with these 20 scientists we have secured 43 senior research staffs as a result of what we call counter brain drain efforts.

In analyzing what factors have been significant in attracting qualified staff members three things have been essential:

- 1 Assured autonomy and stability of the organization
- 2 Adequate research environment and
- 3 Compensation

However this last consideration definitely comes in third place after their interest in stability of the Institute and the nature of its professional environ-

ment. As of March 1970 KIST has 144 research staffs including 29 Ph.D., 28 M.S. and 87 B.S. and some 60 engineers of various degrees actively engaged in research activities.

Even now a significant number of additional individuals abroad have been writing to KIST indicating a genuine interest in the project and inquiring about the possibilities of employment.

After a staff has been recruited it was necessary to orient and train them in the nature of contract research and in the particular aspects of that sector of Korean industry with which they will be most directly concerned. Many of the key personnel had been sent to Battelle Columbus Laboratories for such orientation and training for 3 to 6 months.

After defining with the aid of the technical economic surveys the industrial technological needs in Korea and the staffing requirements for the Institute, it was possible to establish fairly firm criteria for the physical facilities which will house the research activities of KIST.

From the qualitative standpoint it had been determined that KIST facilities should be entirely modern and well equipped to carry out the diverse research activities. Of course research is an ever changing field and with changes in the requirements for research come changes in the equipment and buildings in which this research is carried out. Therefore flexibility in building arrangements and other facilities is highly desirable.

In order to carry out efficient research the KIST should have almost a totally self-contained facility. Therefore adequate back up service such as good analytical laboratories, science libraries, a pilot plant, a precision machine shop, an auditorium, a cafeteria, a staff housing and so forth were required.

On the quantitative side it was also determined that in order to adequately cover the scope of technical services envisioned for KIST staff of approximately 500 persons would be required. Of those 500 approximately 200 will be graduate professional staff members actively engaged in research. This staff size of 500 is projected as the objective for the first five years of operation. If successful and if conditions warrant it is considered possible that KIST will expand to as much as double this number around 1976.

With such diverse activities and functions to house it is not surprising that the Institute design called for erection of number of individual structures. The total floor space of this building complex comprises 41,329 m<sup>2</sup> on the site of 270,600 m<sup>2</sup>.

It took full three years to complete the construction. The Korean Government contributed the site and 1.6 billion won for construction and U.S. Government 2.5 million dollars for construction commodities. Because the research subjects with which KIST will be dealing range from the relatively simple to the rather sophisticated so must the research equipment for the laboratories cover the same range. The United States equipment for the laboratories cover the same range. The United States Government supported 3.35 million dollars to procure such research equipment.

Now let me take a few minutes to tell you the highlight of the organization of KIST.

As an independent entity the ultimate authority in the Institute resides in a self-perpetuating board of trustees. The Board of Trustees is composed of 11

members three representing academic society three from business community and 6 ex officio trustees namely Vice Ministers of Economic Planning Board Commerce and Industry and Science and Technology Representative from USAID/K and Representative from the sister Institute The President of the Institute is elected among the members of the Board of Trustees

In a staff relationship to the President is a Research Activities Review Committee This Committee is at present composed of three Vice Presidents and several senior research staff The Committee is charged with advising the President in connection with the selection of research staff and research theme allocation of research funds and evaluation of research results

Based on the sizable strength of capable research staff we have recruited and the determination of the Institute's scope of work as a result of the technical economic surveys we have established 31 laboratories which cover the fields in materials science metallurgy chemical engineering food technology electronics mechanical engineering industrial economics and so forth These laboratories however are flexible and be discontinued or further augmented according to the project needs Further it is possible to form a research group according to the nature and volume of the research work

Supporting these laboratories are various technical services which include library technical information chemical analysis materials testing machine shop pilot plant and electric data processing services Our information work provides besides general information services answers to or state of the art reports on the current technical problems in a field by operating an information analysis center The machine shop is for the fabrication of not only the materials and devices necessary for carrying our research projects but also for the prototype production of machinery or machine parts for mechanical industry The pilot plant gives a practical test to research findings for product and process development to confirm their technical and economic feasibility of industrial application on a commercial scale Our computer center is equipped with a CDC 3300 system to herald the advent of an information era in Korea These services are also provided of course to government agencies and industries upon request

Our scientists and engineers in these laboratories and services maintain active contacts with government agencies and industries to promote mutual understanding of research and development Although the construction work and the procurement of research equipment were still underway we concurrently carried out various research projects By the end of February 1970 196 research projects were contracted with the government and industry of which 94 projects have been completed and some 100 projects still in progress Originated from these completed projects are 32 patent applications both at home and overseas of which nine have been patented in Korea and five have been petitioned for U S and British patents

Keeping pace with these efforts for contract research we also carry out oriented basic research in an effort to create a source of new technology Although the work of basic research requires considerable investment without giving immediate returns such basic research is extremely important since it will provide the foundation for the industrial growth anticipated in the long range development plan of the country Such basic research initiated by the Institute and financed by the government will increase our competence in specific technological fields

for the attainment of scientific and technological standards comparable to industrially developed countries Currently we are on a few of such long term basic research projects

As such our Institute has successfully started to meet the expectations of the country It is now carrying on part of its function to serve the scientific and technological needs of Korea and beginning to demonstrate itself as an invaluable and indispensable research and development center for Korean industry The demand for our services is increasing at a much faster tempo than originally expected as a result of the sustained economic growth of the country during the past years

Now let me speak about the future prospects of our Institute The Korea Institute of Science and Technology came into existence out of the national expectation for the promotion of science and technology for economic development The objective of this development for this coming decade is to raise per capita national income to the \$500 level and exports to the \$5 billion level as expressed by our President in his New Year message Our Institute must therefore make a maximum possible contribution to the attainment of this goal

The current Second Five Year Economic Development Plan will close next year and the Third Five Year Plan will begin from 1972 This long range plan enables the economy to grow at an accelerated tempo on the basis of a stepped up industrialization process Several industries such as materials electronics petrochemicals and machinery have been selected as strategic sectors to speed up the industrialization process

Under the circumstances the task that the Institute should deal with in the coming decade is to provide technical know how for industries especially for the above mentioned strategic industries to expedite the industrialization process In other words it must be the cradle of technical innovation in Korea To this end the Institute should establish technical excellence in a number of specific fields while improving its general research capabilities This will require an adequate professional environment for the research staff to encourage their continuing education and enhance their technical performance and an optimum growth both in staff and in facilities as well

The requirement for growth chiefly arises however from the demand for our research services since our Institute is characteristically a contract research organization For a sound and smooth growth therefore it is necessary for us to make a demand forecast both short—and long range chiefly based on the development status of industry and the government's long range economic development plan The technical economic surveys of industries we have already conducted provided valuable data and information for such a forecast as I mentioned earlier Needless to say this forecast should be modified at intervals of an appropriate period depending on the development tempo of industry

Our forecast of staff growth for 1976 the closing year of the Third Five Year Economic Development Plan is a size of 1 000 people calculated on the basis of the present and potential market for our research services and the supply of trained people in the country At present about 500 people including various supporting personnel are on our staff Based on this forecast of staff growth the number of laboratories organized on a project basis will increase to 70 or 80 To house such diverse activities and functions we will need additional research

buildings based on the approximate ratio of space versus employee in the present facilities. Also additional research equipment will be needed to equip these buildings again on the basis of the ratio of equipment cost to construction cost in the present facilities.

With this growth in staff and facilities we expect that we can satisfactorily meet the demand for our research services in the years to come at least in this coming decade. According to our forecast we shall be increasingly asked to conduct research and development for those industries which bear strategic importance in the carrying out of the Third Five Year Economic Development Plan. We shall be also required to place emphasis of our research effort on such technical fields as can best contribute to the development of the exporting industry toward the milestone of self-sufficiency. This means in turn that the growth of our Institute in the coming decade must be so directed as to meet the research demand of these strategic and exporting industries.

To provide an adequate professional environment for the research staff we are considering a number of programs. After three years consecutive service principal investigators are granted an overseas paid sabbatical leave for an year so that they may keep abreast of recent scientific and technological developments and also exchange up to date research findings with foreign scientists and engineers. The invitation program for noted foreign scientists to stay at our Institute for several months to a year is under consideration along with a post doctoral fellowship program for young foreign scientists. Besides we will sponsor an international symposium once a year on a subject closely related to the development of our Institute and to Korean science and technology inviting noted foreign scientists and engineers. The last two programs are also aimed at contributing to international cooperation in science and technology which provides a tool for Korea to catch up with the world standards and an instrument for the world to promote the common welfare of mankind in this era of science and technology.

Distinguished delegates all of us have a sense of the importance of this project to Korea. The problems are remarkably complex and diverse but we can see the promise for our country. Not only will KIST benefit Korea but we have every expectation that it will be a beacon and focus for science and technology in our part of the world. And from it will come a knowledge and experience of value in establishing applied research organizations elsewhere.

We are all highly stimulated by the challenge of this program and we are appreciative of the opportunity which has been created by the two governments to develop this institution. We particularly appreciate profound interest, courageous decision and strong support of President Park in connection with this project. Without his support we would not have been able to come thus far.

Although it is still in the initial stage we firmly believe that KIST had a good start. As you well know the proof of the value of this program depends upon its actual results and I believe the Institute can produce such results as to lay bridges over the rivers and ravines which Korea must cross to reach the goal of self-sufficiency. And it will become a real model of research and development activities for developing countries to show how science and technology can help achieve self-sufficiency and modernization in such countries.

### KOREAN SOCIETY FOR FUTURE STUDIES (Korea)

HAHN BEEN LEE *Founding Member, Professor and Dean, Graduate School of Public Administration, Seoul National University*

The Korean Society for Future Studies was born on July 6, 1968 reflecting three kinds of impetus that were present in the mid sixties in and out of Korea.

The first impetus was the very phenomenon of rapid economic and social development in the country since the beginning of the decade, the second was a simultaneous resurgence and reorientation of various academic disciplines especially the social sciences and the third was the stimuli of several trends of future studies in Europe and the United States around that time.

The KSFS has now some thirty five members who represent various disciplines (philosophy, theology, sociology, economics, political science, public administration, law, planning, education, physics, chemistry, biology, psychiatry, medicine, engineering, systems analysis, etc.) and various institutions (universities, the press, business, banks, government, the military, church, youth organization, etc.). Thus the Society is a multi-oriented, multi-disciplinary and multi-institutional forum of relatively young (mostly in the thirties) intellectuals.

The Society's activities in the past one and half years have centered around that of a deliberative forum. It began with monthly inventory taking sessions at which individual members presented papers on the status of futuristic thinking in their respective disciplines in Korea. This series culminated in a Seminar in July 1969 at which future work plans and issues of the Society were discussed. The product of this Seminar as well as the inventory papers have been put together in a volume entitled *An Inquiry into the Future* which has been submitted to the International Future Research Conference as a reference document.

The Society plans to develop into a continuing monitoring and deliberative forum in which various future plans of various public and private agencies (e.g. long term education plans, university plans, economic plans, social plans, urban and regional plans, etc.) could be freely discussed in an intimate manner with emphasis on the value and institutional implications of such plans.

The multi-institutional character of the Society also facilitates the possibility of its members getting engaged in various practical and policy oriented researches in the various institutions to which they individually belong. In this respect there is the need to continuously refine methodology of future research and thinking in the Society.

The Korean Society for Futures Studies desires to open channels of communication and interaction with sister societies in many lands.

Address: Korean Society for Future Studies, Room 13, Graduate School of Public Administration, Seoul National University.

**O E C D (France)**

PETER MENKE-GLUCKERT, *Head of Science Resources Division*

I think it is not necessary to introduce OECD the Organization for Economic Development and Cooperation OECD's original body was the organization for European economic cooperation founded in 1948 It was the objective of this organization to allocate the Marshall Plan aid and to work in cooperation first for economies The original members of O E C wished to perpetuate their joint venture of cooperation and in September 1961 this European agency this European corporation O E E C became the organization for economic cooperation and development with United States and Canada becoming full members Japan and Finland acquired full membership Yugoslavia has a special status to participate in certain activities for instance such as science policy Australia participates in the development activities

O E C D set itself three objectives

First to achieve in its member countries the highest possible sustainable economic growth and a rising standard of living

Second to further the expansion of world trade on a non discriminatory basis

Third to contribute to a sound economic expansion of both O E C D member countries and countries which are in the process of development

And this *Keizai Kyoryoku Kaihatsu Kiko* to use one of the languages of O E C D not yet official language has in Expo 70 Osaka its own pavilion at display and I think all Japanese friends will know it from the twelve different directors and agencies there are programs and papers

O E C D takes an economic and managerial view towards the problems of modern society of today It does not engage in any studies of futurology I say it as simple as that because we had long discussions on whether or not we should have our own programs on future studies And it was decided no we shall not have such programs But I think it is fair to say that in all directorates and activities O E C D analyzes problems in its future dimensions which is a different thing

We do not call it future studies but what we are actually conducting programs for instance in education in problems related to economic growth and technology problems related to manpower policy that we try to assess the present policies in our member states in their future dimension

To give you just three examples of the method used and I am very enthusiastic now especially after yesterday's afternoon session in which our colleagues from Japan presented their ideas on multi channel society Because O E C D tries exactly the same to give some sort of *min a la carte* to its 22 member governments in presentation of issues for a future decision agenda using its vast resources of information statistics data to be linked with the problems arising in member countries And this type of multi channel organization should be I believe also the type of organization we will need in futurology Because it is not only necessary to have ideas in multi channel world society I would say a little bit down to earth first it will be necessary to have some operational arrangement which makes it possible to solve or to analyze or even to present problems for some of the present issues in modern society

The three examples Working party two of O E C D economic policy gives ten year projections of potential trans growth of outputs employment productivity of O E C D member countries In those projections it looks now also to the consequences of technological change as there is pollution environment pollution also information pollution and the kind of decisions to be taken in the next ten years and thirty years perspective

Example number two is educational planning and education policy in O E C D O E C D introduced the term educational planning now quite famous at the Washington conference in 1961 Washington will be in 1970 the so called educational growth conference giving long term perspective for educational growth policies in member countries and achieving in this way a permanent dialogue between industry government and science in this field

Example number three is the work of the development center established within O E C D It serves the purpose to enable countries in the process of development to benefit from the most relevant and forward looking experience available to O E C D member countries The method used is a method of confrontation We mostly examine the country's policies by an independent team of experts who prepare a report by having meetings with representatives from member governments or industry in Paris confronting the report with the practical knowledge and experience of the member government

A last word regarding the problem of forecasting You are aware of the Erich Jantsch O E C D report *Technological Forecasting in Perspective* called now the Old Testament of future research really giving some basis on methods There is also a New Testament the so called Bellagio Conference ( *Perspective of Planning* O E C D Paris 1969) and display in our future library with the planners and especially the famous Moses prophet Osbekhan giving a long paper on the philosophy of planning

**MENTAL HEALTH RESEARCH INSTITUTE (U S A)**

JOHN PLATT, *Associate Director*

The Mental Health Research Institute is a unit of the Department of Psychiatry of The University of Michigan Founded in 1955 it is dedicated to the interdisciplinary study of the brain and behavior Its ultimate goal is to discover the causes of mental illness and to develop methods for its prevention and cure The Institute staff works to realize this goal through a program which includes both basic and applied research Applied research concerned with prevention and cure recognizes the compelling immediate needs of the mentally ill Basic research concerned with the causes of abnormal behavior and the mechanisms of behavior change recognizes the needs of future generations

The interdisciplinary character of Institute research derives from the belief that if we are to understand the complex processes involved in normal and abnormal behavior we must utilize the resources of all the pertinent disciplines The knowledge gained about one level of organization provides clues for the study of problems at the next level So the investigator who studies the chemical systems



organelles that are necessary for the functioning of a neuron in the brain has questions that he can usefully ask another investigator who studies the behavior of the neuron as a unit. Similarly the investigator who studies the dysfunctional behavior of individuals can provide information for studying the ways in which unhealthy interactions in local and national groups lead to great social cost in unproductiveness and conflict.

The Institute also holds a series of seminars on mental health problems stimulates and develops interest in and understanding of such problems among psychiatric residents and postdoctoral graduate and medical students providing research experience and training for them and maintains advisory and consultation service for state organizations concerned with mental health problems.

Results of research are published in the MHRI Annual Reports books pre-publication Communications and professional periodicals. Five journals are edited or published at the Institute including *Behavioral Science*, *Jurimetrics Journal*, *The Journal of Biological Psychology*, *General Systems* and *Cognitive Psychology*.

One of the most important developments at the Institute related to world futures is the development of concepts and experimental data on non-zero sum game theory. A game such as Prisoners Dilemma illustrates the dilemma which two people or two groups can get into if they are in a non-zero sum situation where they may both win together or both lose together. It turns out that in many of these games there is a conflict between individual rationality which says "Don't cooperate with that other man" and collective rationality which says "Cooperate and you will both win." This dilemma is characteristic of many world dilemmas today. I would like to see fifty laboratory groups around the world studying this kind of two-person game theory. I think the relation of such research to world conflict is very similar to the relation of the physics and chemistry of explosions to the operation of a gasoline engine. We will only be able to design a successful and moderately stable world system if we understand on a theoretical and experimental laboratory basis the bases of human conflict and cooperation.

## THE RAND CORPORATION (U S A)

YEHEZKEL DROR

In speaking about the Rand Corporation let me go from the particular to the general and to perhaps the universal.

What is well known to all of us is that the Rand Corporation is the first think tank of this century. It was established about 22 years ago and it has about 600 professionals. In a sense it is a policy-oriented interdisciplinary highly professional academic institute which can be best imagined to someone who is not at such a body as a university without students without departments where all research is policy-oriented. Just to convey one flavour of the difference between the universities which I know and the Rand Corporation the thing that

struck me most when I joined them about a year and a half ago was the fact of frank mutual critique. At the university once I rose beyond a certain rank no one criticized me to the face. At the Rand Corporation bull sessions where the most junior member is expected first to tear to pieces the draft of the head of the department are regular institutional features. I found this very refreshing and it well illustrated the differences in culture between a think tank and more conventional bureaucratic organizations on one hand and most of the universities that I know of on the other hand.

I would say that the main characteristics of the Rand Corporation as I see it today is the transition from more defence-oriented issues to broader social issues (Not necessarily out of any feeling of guilt for defence and foreign affairs). There exists a social need and a social mission to develop methods for better analysis of difficult social issues. The New York City Rand Institute constitutes today's biggest think unit devoted to a particular urban area. It has about 60 professionals and this is a good illustration of this trend.

Let me add also that an organization as Rand does not have institutional positions. The main product of the Rand Corporation is policy-relevant studies which adopt quite different positions. To illustrate an extreme illustration which received a lot of publicity in the US let me mention the recent public exchange of letters in the New York Times between two Rand groups on the Vietnam policy. Two contrary positions held in the Corporation and expressed in this unique occasion in the New York Times.

Why do I regard the Rand Corporation both as highly interesting and as highly significant? I think that the Rand Corporation presents quite an innovative bridge over the age-old dilemma of knowledge and power. It is not the only type of bridge. Social projects are also needed. Social movements are also needed. But the Rand Corporation is really one of the great American inventions in government. It constitutes one of the innovations in how to try and apply structural rationality and systematic knowledge to social policy issues. Other types of organizations include for instance the Center for the Study of Democratic Institutions, Santa Barbara which illustrates an effort to apply organized dreaming to social issues. In fact one cannot expect any single organization to satisfy all the needs of better intellectual approaches to modern social issues. Certainly one of the foundations of the think tank concept is an intellectual approach and the rational approach which recognizes the importance of extrarational and irrational processes and which recognizes the need for additional ways of problem approaching but which itself is devoted to an effort to apply knowledge to social problems. This requires many new methodologies including a lot of future studies (Delphi was first invented at Rand). It is this aspect of the Rand Corporation which leads me personally to regard Rand itself as one of the pioneers of organizations of the future because the idea of a concentration of inter-disciplinary highly-powered professionals whose main interest is policy-oriented research. This I think is one of the necessary avenues for better treatment of our problems.

**POLISH CENTRES FOR FUTURE RESEARCH (Poland)**

ANDRZEJ SICINSKI, *Head of The Group of Social Division Inst of Philosophy and Sociology Polish Academy of Sciences*

Future research in Poland is carried on—in various fields and on various scale—by many groups and institutes

The studies are coordinated by the following centres Commission for Planning at the Ministry Council Committee for Research and Prognoses Poland 2000 Polish Academy of Sciences Committee for Science and Technics

Social Prognoses Group of the Institute of Philosophy and Sociology Polish Academy of Sciences specializes in pursuing projection studies

**Commission for Planning at the Ministry Council** coordinates on behalf of the Government all the projection works in Poland and in particular those connected with prognoses of the *economic development*

**Committee for Research and Prognoses "Poland 2000,"** established by the Polish Academy of Sciences in the middle of 1969 has the task to organize and coordinate research of a complex character devoted to working out a projection of the Polish society in the years 1985–2000 The Committee groups about 50 members representing various disciplines and interests and about 500 co workers The Committee consists of four commissions (i) Commission for Resources (ii) Commission for Demography Regional Structure and Consumption (iii) Commission for Social Development (with sub commissions for macro structure micro structure work and industry Socialist institutions values and aspirations systems) (iv) Commission for Education and Culture

**Committee for Science and Technics** coordinates projection studies dealing with the development of technics and technology and—together with the Polish Academy of Sciences—prognoses of the science and scientific research development

In the academic year 1969/70 a course entitled *Sociology of the Future* is delivered by Dr Andrzej Sicinski at the Department for Social Sciences The University of Warsaw and a seminar on *Social Prognoses* is organized

**Group of Social Prognoses of the Institute of Philosophy and Sociology—organization**

Group of Social Prognoses was organized in the Institute of Philosophy and Sociology Polish Academy of Sciences as a continuation of the former Centre for Research on Contemporary Culture Polish Academy of Sciences This Centre started its projection studies in 1967 In May 1967 an interdisciplinary conference *Problems of Forecasting the Future and a Model of Culture*<sup>1</sup> was

<sup>1</sup>Materials from the conference have been published (in Polish) in the quarterly *Kultura i Spoleczestwo* (Culture and Society) No 4/1967 and 1/1968

Results of the conference are also discussed in the book *Prognozy a nauka* (Prognoses and Science) by Andrzej Sicinski Warszawa 1969

Foreign language reports from the conference Futurological Conference by J Kurczewski A Lutyk *The Polish Sociological Bulletin* No 2/16/ 1967 pp 127–130 and Quarante Millions des Polonais by M Porebski *Analyse et Prevision* vol V/5 1968

organized This conference stimulated a great interest in future research in Poland and initiated projection studies done by many groups and institutes

The Group of Social Prognoses counts about fifteen researchers The task of the group is

to carry on studies on general methodology of social prognose

the Group realizes this task carrying on among others an interdisciplinary seminar in the methodology of social forecasting the seminar is attended by scientists from various disciplines and research centres and by planners and economic decision makers

to pursue its own future research

to coordinate a cooperation with other groups at the Institute of Philosophy and Sociology as well as with other research centres the aim of this cooperation is the preparation of a volume of studies entitled *Prognoses of Social Development in Poland* at the end of 1975 (as one of synthetic volumes planned by the Institute)

Preliminary results of the studies of the Group will be published in an editorial series *Prognoses of Social Development*

The Group works in the close contact and personal connections with the Commission for Social Development of the Committee Poland 2000

**Assumptions of studies of the Group of Social Prognoses**

From nowadays existing various conceptions of future research the Group decidedly approves the concept that comprehends social prognoses as an interdisciplinary scientific task<sup>2</sup>

We assume that in the system of the planned Socialist economy prognoses are to play a role of the frames of reference for the economic planning first—owing to the fact that they can cover a far greater range of issues than those we could and wanted to cover with planning and second—owing to the fact that they can forego in time the plans (even perspectivist plans) Therefore prognoses can be an important instrument for estimating the chances of realization of a social development programme for specific stages

**Works in progress and thoses planned by the Group of Social Prognoses**

Group's own studies have been planned for the years 1970–75 They involve two kinds of studies (i) Prognoses of transformations of value systems of the Polish society in the course of the forthcoming 15 and 30 years (ii) Methodological problems of social forecasting

In the first group carrying out of following projects is planned

- 1) a theoretical study Goals and aspirations as factors of social change
- 2) an international comparative survey Factors differentiating social aspirations
- 3) as the central subject Prognoses of changes in cultural environment in Poland
- 4) as a study developing the central subject Scientific and technical revolution and changes in value systems<sup>3</sup>

<sup>2</sup>Beside this conception I have distinguished in other place utopistic technocratic and scientific concepts

In 1970 as an introduction to the above mentioned projects and at the same time as a continuation of studies of the former Centre for Research on Contemporary Culture realization of two projects is under way Prognosis of the development of the Polish educational system for the years 1985–2000

Changes in consumption patterns and changes in values and aspirations systems in Poland (until 2000)

In the second group e1 methodological studies the following projects are planned

- 1) Prognoses and social planning
- 2) Unfulfilled prognoses (a methodological analysis on Polish materials of XXth century)
- 3) The role of models of social processes in future research ,
- 4) Indicators of social change

#### International cooperation

The Group of Social Prognoses is in contacts with foreign centres involved in future research—mainly with the group Futuribles Paris and with some Italian British and Scandinavian centres In 1967 representatives of the Group attended the International Future Research Inaugural Congress in Oslo In 1968/69 the head of the Group had the opportunity of getting in touch with people and institutions doing future research in the States during his stay in the U S A

The Group lays great store upon contacts—with centres for future research in the Socialist countries trying to settle more stable forms of cooperation

### ROYAL SWEDISH ACADEMY OF ENGINEERING SCIENCES (Sweden)

ULF LANDERGREN *Head Materials Division and Consultant in Future Research Research Inst of National Defence*

#### Futures Research in Sweden

Before giving you a rather sketchy picture of futures research in Sweden I would like to start with something the Haiku master Issa has written

Tsuyu no yo wa  
tsuyu no yo nagara  
sari nagara

which translated means something like

Of dew is the world  
and will never be but dew

<sup>3</sup>In the plans of the Commission for Social Development Committee Poland 2000 there is also a project treated as an element of the Group's plan namely Sociological historical study of the evolution of goals and aspirations in Polish society in the last 150 years

—and yet—yet

This hopeful yet I trust will give the spirit in which this conference will proceed

The picture of futures research in Sweden is not a clear one with well established well functioning activities co operating on a national basis Instead the picture is composed of several disparate endeavours with different approaches different ambition levels and dissimilar aims Moreover no real consensus exists as to what kind of activities should be classified as futures research However I believe this picture is also true for most other countries and I have taken the liberty to humorously and allegorically depict the state of affairs in futures research with the help of figures 1 and 2 taken from a magazine *Blandaren* (The Mixer) which is published twice yearly by the students at the Royal Institute of Technology in Stockholm

In spite of the fact that very few results of futures research have been published interest in the field has risen sharply during the last 2–3 years and a rather intensive discussion has started concerning the priority organization aims means and methods of futures research Furthermore strong forces are now working to get greater resources to the field to bring about better co operation and co ordination and to get activities started which are not bound by vested interests There seems to be very little dissent about the importance of the field for the long range planning of our society (and parts there of) Differences in opinion occur when the how (and how much ) are being discussed

#### Futures research as presented by mass media

Futures research is covered by mass media in different ways The coverage is unfortunately however seldom relevant

The most popular presentation of the results of futures research in both TV radio and the press is of the type of The year 2000 where one too often focuses the interest on the most spectacular and sensational extrapolations of existing trends in especially medicine and technology These presentations in my opinion give the general public a completely false picture of the main objectives and methods of futures research Principally I criticize these scenarios of the future because they very seldom contain alternative developments and almost never point out or discuss the options we have but more or less flatly state that this is the future we shall probably all have

There is another type of mass media coverage of futures research however with which I can sympathize I am thinking of presentations often by professionals of negative consequences of present trends in our society e g negative side effects of developments in technology In spite of the fact that these negative scenarios of the future sometimes are exaggerated sometimes even based on false assumptions they do point out questionable changes in our environment and help bring pressure on various organizations and authorities to investigate things further The grave problems of pollution of air water and land have for example been brought to our attention very much because of mass media presentations of negative scenarios of the future The organization aims means and methods of futures research is being discussed fairly extensively by professionals and organizations interested in the field but too little of this discussion is brought to the general public with the help of mass media

### Forecasting activities—a few examples

The activities in futures research in Sweden are mostly intimately related to long range planning problems. Futures research is increasing in importance as many organizations are forwarding their planning horizons and also going over to program planning. In the short time allotted to me I can only give you a few examples of what is going on in Sweden in this field.

The Central Bureau of Statistics is our largest organization for collection and treatment of data of various kinds. They also make forecasts, mostly extrapolations of demographic data but also integrated forecasts for certain areas.

The departments of Government are of course in great need of broad long range forecasts for their national planning activities. In the Department of Finance one group of people is continuously working on economic forecasts but also in the other departments competent forecasting groups are being organized. This is in particular true for the Department of Technology, the Department of Communications and for the Department of Education where one is at present preparing a scenario which is supposed to serve as a basis for a discussion on future goals (in education). In the Department of Civil Service Affairs one is now working on a scenario about the future use of our land and water resources. The time perspective is around 30 years. A first draft of this scenario—which will be called a National Physical Plan—will be published in 1971.

As in many other countries the longest and most profound experience of forecasting and long range planning is to be found in the defence organizations. (Parenthetically I may mention that one is now working with a 15 year perspective plan and a 5 year program plan.) In this work the organization to which I belong, the Research Institute of National Defence (FOA) has participated heavily. The institute helped to prepare the first broad technological forecast in 1953 and has just finished the 7th or 1970 edition of this forecast. The institute is also greatly contributing to scenario writing of international developments. In these scenarios we are interested in developments (not necessarily likely) which might lead to conflicts which may possibly lead to aggression against Sweden. We then plan our defence so that if possible such forecasted aggressions can be avoided and so that if they cannot be avoided they can be met as effectively as possible. We are also studying possible developments of certain sectors of the Swedish society as an aid to the long range planning activities at the different defence organizations. At our institute we furthermore have competence in systems analysis, gaming theory and decision and planning theory which is of great help in our futures research.

Another authority I would like to mention which is strongly engaged in futures research is the Swedish Board for Technical Development. This authority both supports work in futures research as well as engages in such work as part of its long range planning activities. The director, Dr Martin Fehrm, who was formerly heading the Research Institute of National Defence is one of the foremost persons to promote futures research in Sweden.

The Swedish industry has not until recent years been very active in futures research, probably because of too near lying planning horizons. This state of affairs is however rapidly changing. And the large corporations have for many years been engaged in systematic long range development studies coupled to

their planning functions. They have also to some extent bought techno economic forecasts from abroad. An example of early industrial forecasting is given in figure 3. The forecast which proved to be accurate was prepared in 1952 by Lars Brising then at SAAB, the Swedish airplane company.

Various branch organizations are also more and more becoming interested in futures research. Thus the Swedish Association of Metal Working Industry for instance is at present working with an energy forecast and a forecast for non physical communication.

The Swedish banks and insurance companies are likewise becoming increasingly interested in futures research. As an example I may mention that the insurance company Skandiakoncernen is preparing social forecasts and scenarios as a basis for discussions of and planning for its role in a future society. As I understand it insurance may not necessarily be the company's main business activity in the future.

Non profit organizations like for instance the Swedish Confederation of Trade Unions and the Swedish Association for Engineers and Architects are other examples of growing interest in the field. The latter organization two years ago wrote scenarios for both physical and non physical communications prepared through a series of round table discussions. In its magazine *Teknisk Tidskrift* this organization has provoked an interesting and stimulating debate around various problems in futures research.

Lastly I should mention that a couple of consulting firms are engaging in futures research, preparing forecasts, giving advice as to methodology etcetera and even offering courses in forecasting.

### A Swedish Institute for the Future?

I mentioned in the beginning of my paper that strong forces were working to bring some kind of unification to the field of futures research in Sweden. Many of these forces, representing both private and public interests, met in a committee at the Academy of the Engineering Sciences where they investigated the need for a national institute for the future. The committee found that such a need existed and last year proposed the establishment of a non profit independent institute financed by both public and private funds. The activities at the institute should according to the proposal concentrate on theory and methodology, information and documentation problems and broad long range integrated forecasting (so called societal forecasting).

A similar proposition has been submitted by the Liberal Party and was recently discussed in our Parliament. Furthermore a proposal of a Scandinavian institute for the future was discussed in the Nordic Council as late as February 11, 1970. It was then decided to submit the proposal to the Scandinavian Governments for further analysis and deliberation.

What are then the chances that we shall soon have a Swedish and/or a Scandinavian institute for the future? Well, frankly I do not know. Criticism of the proposal by the Academy of the Engineering Sciences has been voiced, not least by young people, some of whom fear that an institute might work to consolidate the Establishment and might in principle be opposed to changes in society. Some people would on the other hand like to have only a state governed institute.

and others again would like to see competition between a state governed institute and an institute financed by private interests. There are thus many possible alternatives to consider.

As (former) chairman of the working committee at the Academy of Engineering Sciences I would of course like to see the establishment of an independent institute for the future. But more important than the foundation of an institute I believe it is that we get greater resources in the country for futures research that we co operate more nationally and internationally that we better our communications and—not least—that we bring our ideas and results from futures research out to the general public.

My feelings in this respect are aptly described by figure 4 where the text is taken from the magazine *Blandaren*

It is not enough just to say  
Hallelujah  
/ You also have to do it

**SAINT** (Austria)

LOUIS MARK TURNER *Secretary, S A I N T*

#### Aims

SAINT is an European based conference organizing body which works in the field of science policies. We take our brief in the widest sense including both the advance planning of scientific development as well as the remedial measures needed to counter unplanned consequences of technological advance.

We primarily aim at the coming generation of professionals in this field (people in their late 20 s or early 30 s). We arrange conferences in which they can meet and question leading authorities in their fields. We also encourage our members to give papers themselves.

#### History

SAINT is an offshoot of the Salzburg Seminar in American Studies which was formed shortly after the Second World War to introduce European participants to aspects of American life. Since then its goals have changed so that it concentrates on major fields of interest common to both Europe and America mixing both European and American faculty members. It thus runs three or four week sessions on problems like Urban Planning and The Impact of the New Technology attracting participants from anything up to twenty European nations at a time.

The first session on the Impact of Technology on Society was held in the Summer 1967. The participants felt the need for a reunion type organization which would keep them in touch with developments in this field after the specific session had disbanded. A committee was therefore elected and SAINT was created.

Since then we have organised four conferences. Three have been general ones organised round key speakers like Dr Robert Jungk. Professors Daniel Bell and

Eugene Skolnikoff. One has been a specific conference on the organization of industrial research the speakers mostly coming from Britain.

#### Financial and legal aspects

SAINT is a self financing charity registered in Austria. Although we sprang from the Salzburg Seminar (see above) we are totally independent.

#### Membership

This is open to anyone who is professionally involved in some aspect of the science policy field. Individual membership is US \$6 (or equivalent). Corporate membership is \$50.

For further details write to the Secretary (address below)

#### The Committee

Chairman	Dr Gerhard Stoeber	Studiengruppe fur Systemforschung Heidelberg West Germany
Treasurer	Mr Derek Medford	Programmes Analysis Unit Harwell U K
Secretary	Mr Louis Turner	Department of Sociology Salford University Salford M54 WT U K
	Mr Vladimir Koscevic	Workers University Zagreb Yugo slavia
	Mr Bengt Arne Vedin	Editor <i>Ny Teknik</i> Sweden

#### CONFERENCE 1 Impact of the New Technology

Schloss Leopoldskron Salzburg September 1968

**Speakers** Robert Jungk Institut fur Zukunftsfragen Vienna—Futurology  
Gianfranco Benati Milan regional planning committee & Louis Turner  
Salford University U K — European attempts to redress regional imbalances  
with special reference to the experience of the United Kingdom and Italy—the  
lessons to be learned and the implication of technological development. Stojan  
Bulat School of political science Belgrade—Jantsch's work on technological  
forecasting—an analysis. Harry Harrison Queens University Belfast—

Advanced quantitative techniques in planning. Ludovit Korcek Bratislava  
— A few notes on the social and economic impact of the new technology.  
Gerhard Leminsky (Institute for economic and social research of German Trade  
Unions Dusseldorf) and John Leslie Miller (Academy of Social Science Rot  
terdam)—the government and industrial relations. Vaclav Nesvera Prague  
— A macroeconomic framework for technological forecasting. Gerhard  
Stoeber Studiengruppe fur Systemforschung Heidelberg—On the relationship  
of technological and social change. Luitpold Uhlmann IFO institute for  
economic research Munich—Technical progress in West Germany.

#### CONFERENCE 2 Impact of the New Technology

Schloss Leopoldskron Salzburg July 1969

**Speakers** Daniel Bell Columbia University—The post industrial society  
Derek Medford Programmes Analysis Unit Harwell U K — Technological  
forecasting. Harry Rothman Manchester University Manchester—Pesti  
cide Controversies. David Edge Science Studies Unit Edinburgh—Meta

phor and McLuhan Zdenek Durpekt Research Institute for building and architecture Brno— Cities in the year 2000 Kaj Westergaard Danish national institute of social research— New social and labour market policy the needs of Greenland Daniel Sundstrom Royal Swedish Academy of Engineering Sciences— The creation of an institute for futures studies Ken Green Manchester University Manchester— The Dragon High Temperature Gas Cooled Reactor an international scientific collaborative effort Milan Mesaric Economic Institute Zagreb— The impact of automation on the organization and management of socialist enterprise Vladimir Koscevic Workers University Zagreb— Technology and workers self management John Leslie Miller Academy of Social Science Rotterdam— Making the organization visible Ruud Bruyns Dutch State Mines— Work and work motivation in an automated industrial organisation Nansen Behar Sofia— The social impact of introducing new management techniques Henning Brogaard Danish national institute of social research— The effects of technological changes on manpower of different qualification levels J Christopher Jones University of Manchester— The professions as inhibitors of socio technical evolution

**CONFERENCE 3** The organization of industrial research and development Graduate Centre for Management Studies Birmingham United Kingdom Sept 69

**Speakers** P D Atkinson IBM (UK) Ltd— The integration of an international research programme Dr Chesters British Steel Corporation— Application of industrial research the human factors Dr Doyle Beechams Ltd— Attempts to maintain research creativity John Langrish Manchester University— The winners of the Queen's award for technological innovation— the lessons to be learned Dr Lawrence Imperial Chemical Industries Ltd— (1) the evaluation of R & D projects (2) Networks and decision trees in research Petr Skalina Research Institute for economics and management Prague— The management of R & D for industrial innovation an overview

**CONFERENCE 4** General conference  
Schloss Leopoldskron Salzburg April 1970

**Speakers** Eugene Skolnikoff MIT and Carnegie Endowment for International Peace— The international implications of technology J Csillaghy and P Perutz Battelle Institute Geneva— Vocation—a crucial element in the search for business growth in a changing environment Philip Hemelryk joint editor LASER London— Common air pollutants the weather and public health Norbert Klebl McKinsey & Co Inc Dusseldorf— the management of research and development Miss Lisl Klein Esso Petroleum Ltd United Kingdom— Using social science in industry—the human part of the system Bruce Lloyd London— The optimal size for innovation and new technology Milan Mesaric Economic Institute Zagreb— Technical progress and economic planning G Moring University of Sussex U K — Changing composition of risks due to technical change in industrial activity Leslie Sklair London School of Economics— The sociology of the opposition to science and technology Gerhard Stoeber and Michael Ripke Studiengruppe fur System

forschung Heidelberg— Programming of research on implications of technology for society a state of the art report on the methodological approaches used in the case study for the German Federal Government G Van der Auwera European Commission— Regional policy in the European Community — Bengt Arne Vedin and Nils B Treving *Ny Teknik* Sweden— Consequence budgeting

### IREA—GRUPPO FUTURIBILI ITALIA (Italy)

MISS ROSITA DONNINI

The Institute for Research on Applied Economics was formally established in Rome in November 1963 Between late 1966 and early 1967 IREA has moved on from strictly sectorial forecasting to an integrative approach to the problems studied turning towards future research and establishing a section called Gruppo Futuribili Italia This Group has undertaken the basic task of contributing in Italy to the formation of a true future awareness at all levels The Group addresses itself not only towards scientific and cultural circles but also to public sector and business Consequently a specialized futurological documentation center has been created At everybody's request part of this documentation can be reprinted and sent to persons interested at pure reprinting cost

The Gruppo Futuribili Italia has developed its activities in two parallel directions the publication of a magazine and the carrying out of researches The magazine FUTURIBILI started in November 1967 as a quarterly and published as a monthly since January 1969 is designed to perform in its specific field a number of interconnected functions In the first place it makes the Italian public aware of the research work done and progress achieved in the countries which are in the forefront of futurology Secondly it publishes the first results of the researches conducted in Italy and with reference to Italian problems In the third place it encourages Italy's specialized scholars to cooperate as it is already being done abroad to broader interdisciplinary projects also on an international scale Fourthly it makes the leading classes and public opinion in general aware of the need for thinking about the future and devoting physical and mental resources to deliberate shaping of this future in a wide range of fields of human endeavor from politics to economics from town planning to education from public health to the preservation of natural artistic and cultural resources from science and technology in general to the values by which they can and must essentially be guided

IREA and Gruppo Futuribili Italia have either sponsored or carried out directly a number of closely interconnected projects in theoretical and practical operational research amongst which I can mention the following two investigations the prospects of retailing in Europe in Seventies evolution and possible implications of public interventions in the economic field

Another very important research conducted under the direction of Professor Selan with collaboration of a well known Italian architect and sponsored by a

public body has recently been completed. The subject was Rome 2000. Five different alternatives of town planning were examined for a metropolitan area presumably including from eight to ten millions of inhabitants. Most of the various aspects of social and economic development were also forecasted and evaluated, indicating some practical solutions to be presented to political authorities concerning for example industry, retail trade, transportation, air traffic, tourism, etc.

The success of *FUTURIBILI* magazine publications and of the researches of our Group confirms that the Italian society is ripe to receive the ideological message we are trying to transmit.

## MANKIND 2000 INTERNATIONAL

FRED L. POLAK

Mr. Chairman—through a misunderstanding on my part for which I apologise, I had not understood that I was going to speak here, so I did not prepare myself as I should have done. Now I can only tell in a few words what most of you already know—that we held our first Congress in Oslo in 1967 and from there has sprung this Japanese Congress we are attending now. But apart from this we think that Mankind 2000 as such should continue with its work. The reason for this has become rather clear in this very Congress. We have the feeling that there is at least one factor which should be treated more explicitly and more widely than can be done in all the sections of this Congress and that is especially and particularly the human aspect of futures development. We think that there are not to be neglected dangers for man in the future and particularly for the human aspects of future developments. So we think it necessary to draw attention to this human aspect as such which until now seems to us to have been a little neglected in almost all the future dealings by different specialists from the various fields.

Now therefore we see the need for another Congress and we hope to hold it next year in the Netherlands though I cannot promise you this. We need of course financial support for it and I'm not yet quite sure that we will get it. But I think the next Congress should be devoted primarily to the specific human aspect of future developments.\*

Of course much could be said about this particular human aspect. This crops up almost everywhere in future developments. It has something to do with the environment and with the trend towards the megalopolis with the explosion of the world population and with the possible creation of babies from a test tube with the rising problems of information and communication with the maintenance of world peace and the amelioration of human understanding. But I do not want to enumerate prematurely topics for a new Congress to be held.

There is one consideration here however that seems very important to us

\*This conference has since been postponed though working meetings on this issue are planned during the course of 1971.

namely how are we to get the participation of the great mass of people? How are people in general to become more conscious of the future and more able to make alternative choices about the future? At this moment there is a great gap a great distance between those few the select few the elite devoted to future research and future study and the general public. We want better methods of democratization better techniques in order to have everybody or as many people as possible participating in a creative way in solving the problems of the problems of the future.

I may add that for us this point of view is not new. On the contrary it is expressed clearly in the name we chose from the very beginning: Mankind 2000 International.

The term *Mankind* of course referred to the human evolution as such. The figure 2000 was an indication of our expressed interest in the future. The added term *International* was meant to indicate that with regard to Mankind there did not exist for us any geographic frontiers but that we were thinking and fervently hoped to expand on a planetary or worldwide scale.

Of course in a time period of three years we have not yet progressed that far. But we do hope that by striving into that direction and making steady advances we will be able to gradually approach these goals ever further.

I presume that it is not expected from me to already outline now the ways we intend to follow and the means which might best be used to realise our professed intentions. The less so as we are here in Kyoto and also will after Kyoto organizing committee meetings to work out more detailed plans. You will of course be informed as soon as possible about any such plans destined to optimally reach our aims.

Anyhow we do hope that we will get your valuable support for those plans and your advice with regard to possible improvements.

Now this Mr. Chairman is the gist of what there is to tell you now. Had I been prepared I would have said it better but I trust you will agree in principle with the main ideas and I would be glad to hear the opinion of those here present. Thank you.

## BRIEF HISTORY

The Mankind 2000 project is an independent initiative originally proposed by Dr. Robert Jungk at the inaugural congress of the International Confederation for Disarmament and Peace in Sweden in 1964 and initially promoted through their secretariat in London. A memorandum entitled *Mankind 2000: A Vision of Tomorrow* was commissioned by them and produced by Maurice Rickards of London after exploratory discussions with Dr. Jungk and Claude Bourdet Paris. This memorandum was distributed internationally and on the basis of the positive response it aroused an initial Mankind 2000 meeting took place at the Ciba Foundation Centre in London in November 1965. At this meeting a provisional Mankind 2000 secretariat was formed having Dr. Jungk as Hon. President, Kenneth Lee U.K. as Chairman, James Wellesley Wesley U.K. as secretary and a finance and advisory committee with Professor Dr. Fred L. Polak Netherlands, Monsieur Georges Gueron France and Mr.

A V S de Reuk U K as members This Secretariat was charged with the primary task of

- a) Drawing the attention of experts specific interest groups and members of the public toward the dangers problems and possibilities of common concern which could be foreseen or anticipated as likely to confront us locally nationally and internationally within the period of 35 years (1/2 a person's present life expectancy) remaining in the present millennium
- b) Establishing contact with any person or group from whatever culture or discipline already actively engaged in future oriented work
- c) Introducing such people to each other where their interests were seen to overlap or be complementary to one another
- d) Indicating those aspects of future concern which it was considered were not receiving adequate attention and promoting preliminary study in this connection
- e) Promoting the formation of inter disciplinary working groups which might come to function as look out posts to warn of dangers ahead and to indicate opportunities for furthering the well being of mankind in the future

As those specifically charged with this task were and still are actively involved in numerous other socially oriented endeavors their initiatives in the above respect have not been solely confined within the aegis of the Mankind 2000 context

In 1966 Mankind 2000 formally registered in the Netherlands as a charitable non profit making educational trust

In September 1967 Mankind 2000 in co operation with the International Peace Research Institute Oslo and the Institut fur Zukunfts fragen of Vienna organised the International Future Research Inaugural Congress which took place at Oslo The theme of the congress was The Near Future of Mankind Peace and Development 1970-2000 Some 70 experts from East and West Europe Israel the U S A and Japan participated The proceedings of this Congress have been published in a book entitled Mankind 2000 \*

At this Congress a further committee was established having 18 members representative of those countries participating which became known as the International Future Research Congress Committee (I F R C Committee) Its aim was to promote the new inter disciplinary and cross cultural study of Futures Research and Planning on a professional basis and in accordance with generally accepted standards of investigation and procedure It was proposed that this committee should work toward holding a further I F R C conference in the Netherlands the following year (1968/69) but this was superseded by the International Future Research Conference which eventually took place in Kyoto Japan in April 1970

It is important to note that following the Oslo Congress in 1967 those most closely associated with the Mankind 2000 project felt that the focus of attention

\*This book may be obtained in English from

- (i) UNIVERSITETSFORLAGET P O BOX 307 Blindern Oslo 3 Norway
- (ii) P O Box 142 Boston Massachusetts 02113 U S A
- (iii) George Allen and Unwin Ltd London England

should become more specifically directed toward the human factor in planning for the future This focus had been implicit from the outset In the original memorandum produced by Maurice Rickards Mankind 2000 A Vision of Tomorrow an exhibition of the future had been proposed designed to confront the viewer with a challenging glimpse of alternative possible worlds of the year 2000 presenting the dangers problems and opportunities to be anticipated in the intervening period and on appraisal of the rights and responsibilities of the individual in the context of new technologies and new communities Finally however the visitor would find himself confronted by the most important presentation in the exhibition—the image of himself as the central problem/potential of the future

With this in mind Mankind 2000 distributed a proposal in May 1968 that an international meeting should take place at Hiroshima in August 1970 on the theme Human Development in a critical future—new challenges new abilities new dimensions in order to focus attention upon the underlying factors of human need and human development Though the response to this proposal was positive and constructive the planning of this conference was eventually discontinued when it became certain that the I F R C conference which was subsequently proposed by our Japanese colleagues would take place in Kyoto earlier the same year

At this International Future Research Conference in Kyoto April 1970 a meeting of Mankind 2000 was held and the following new directives were initiated

- (i) That for interim purposes the existing Committee of Mankind 2000 would continue to function as heretofore (See list of members p 1 with the exception of Mr A V S de Reuk)
- (ii) That James Wellesley Wesley become Executive Director and be charged with the responsibility of reorganising the functional aspects of Mankind 2000 and the decision making authority for the further development of the project as a whole
- (iii) That within such reorganisation an expanded Advisory Council would augment the existing Committee

## PRESENT PERSPECTIVE OF MANKIND 2000

In view of the rapid development of interest in futures research and planning the increasing number of people engaged in related activities the proliferation of information in this connection and the networks of communication now operative between people working in this new inter disciplinary and cross cultural field it is now seen to be necessary for Mankind 2000 to focus down if our efforts are to contribute constructively and substantially to the future course of events

While remaining aware of the continuing need for bridging the gaps in communication between different cultural and professional groups and particularly that existing between the general public and the specialist/expert we now consider it is of paramount importance that attention become directed toward and concentrated upon *the individual person*—the fundamental particle of every



magnitude of human relationship from the nuclear family group to the emerging world community—who is the inheritor of an already enormous and rapidly developing power for intervening in the physical structure and processes of our world (and of ourselves) Individuals in their personal and institutional roles now have an enhanced capacity for control which can be harnessed equally for constructive or destructive ends

The needs and potentialities of the person particularly those associated with the psychic and essential aspects of his existence once physical survival and development has been provided for constitute the blind spot in the vision of those now engaged in determining what our future goals should be and how the future course of events may be steered toward their achievement and also of those whose attention and energies are concentrated on trying to control the present situation—locally nationally and internationally

It would seem that there are two principle issues confronting us today—

- 1 the enormous task of World Housekeeping (e.g. material resources biophysical and biotechnical processes economic and political institutions etc.) which can no longer be left to work itself out on the haphazard basis of exploitation and abandon but which requires farsightedness very careful management and all the scientific know how and technical ability that can be developed and brought to bear
- 2 The other major issue is that of human relationship—of coming to live together with the other inhabitants of the house—which now that it finally involves having to co exist in *one* house can no longer be avoided by the traditional expedients of narcissistic isolationism (out of sight is out of mind) or of us uniting against them No amount of manipulation of the bio physical structures and processes of the world or of socio political and economic structures can wholly solve this issue Fundamentally this is a problem of human development necessitating insight and a change of heart in each individual The rapidly growing challenge to the individual may be stated as— Change or you will be changed

### SUMMARY OF INTENT

- A To promote a comprehensive (total systems) approach to the problems and possibilities of the near future as these may be anticipated today having as a time horizon a period of 35 years—half of today's average life expectancy To this end to encourage inter communication correlation and co operation between cultures disciplines and people generally
- B To ensure that the future of mankind be person centered and democratically determined Mankind 2000 underlines the encouragement of individual involvement and choice in defining and realising the future course of events Failure to participate in the consideration and determination of the future is in effect to abdicate responsibility and to choose by default unless such responsibility is intentionally delegated

*Mankind 2000's central concern* is the safe guarding of the human factor in planning for the future It emphasises concentration of attention upon the individual and through gaining insight into the physical psychic and essential needs

of the individual to help promote adequate provision for and such facilitating environments as may be best fitted to encourage human development as the foundation of optimal human well being and inter relationship in the future

Only to the extent to which our socio political structures economic resources and technological capabilities are adapted to facilitate rather than frustrate such development will the future become truly person centered The individual must come to feel he is the agent and beneficiary of change rather than the victim of technological developments unrelated to his basic needs He should be freed of restrictive legislation resulting from fear of the potentially disruptive effect of human development upon the existing status quo and of education systems designed to serve national political and economic interests alone

Equally it is only through the direct association of future societal goals with prior individual human needs that it will be possible to arouse public support for necessary present measures

### ACTION PROGRAM OUTLINE

- A *Immediate* efforts are being made to find measures for stimulating—
  - 1) The promotion of Mankind 2000 representation and affiliation in different areas of the world amongst those sharing our concern
  - 2) Research into the complexities of human nature individual and collective and the psychology of personal and social health
  - 3) The monitoring of technological developments and estimation of how such developments may best be employed in the service of long term human well being
  - 4) Investigation of the most graphic means that may bring to the attention of people the situations that they have inherited and how these came to be so the situations that will most probably confront them and their children in their lifetime and how these may be influenced and their own rights and responsibilities within this context
- B *Continuing long term* efforts will be made—to stimulate investigation of the following main areas
  - 1) Personal needs and capacities male/female throughout the life span
  - 2) Social needs—micro macro scale i.e. from individual to societal
  - 3) Physical psychic and essential health safeguards
  - 4) Education for life in the future
  - 5) Facilitating material socio political and economic structures
  - 6) Material resources production methods employment procedures
  - 7) Anti pollution controls and safeguards socio physical and mental dimensions
  - 8) Technologies that may be employed in the service of mankind
  - 9) Methodological procedures and techniques for facilitating futures research and long range planning including approaches to integrated global information systems

*The primary function* of Mankind 2000 is to stimulate promote and encourage the widest and most searching attention to the future needs goals and value priorities of mankind

**WERKGROEP 2000 (Holland)**

LEO GERARD KORTENHORST

At these morning sessions various organisations and institutes from all parts of the world that are engaged directly or indirectly on future research have already presented themselves to you or will soon do so

The question may be raised in what the Dutch group Werkgroep 2000 even tually differs from the other groups. Maybe the quintessence could lie in the absence of being a static institute or institution. Werkgroep 2000 sees itself rather as a phenomenon. It feels that its systematic approach towards the future research cannot be fitted into the organisational pattern of an institute. An institute has to abide by certain rules of organisation and has certain responsibilities to outside groups and persons. The financial impetus that brings such in institute into being often seeks to influence or bend its policy in a given direction.

Werkgroep 2000 saw that from the start as a limitation of its freedom of action and has sought forms that would allow it the maximum of flexibility in its approach to the future.

In today's world the exact sciences—specifically the technical and economical knowledge—have a big lead over social or soft ware science. In seeking to discover the humanitarian implications of the future we feel that statistical or extrapolation techniques grouped in streamlined modern work programmes fall short—are just unusable or still more—are quite unacceptable as approach of the future.

The working method of Werkgroep 2000 sometimes pretends in itself a suggestion for the future. More often than not this working method though it meets increasingly with apprehension clashes with today's society. Therefore—we are well aware—Werkgroep 2000 is slightly disturbing for those who come into contact with it.

Often our methods of approach to the future lie on a similar wavelength to that of other future research groups. However still more we break up the accepted pattern of future research and consequently some of our researchers—not all of them—even contest trends of gradual changes and fiercely attack opponents in this field. Werkgroep 2000 is well aware that many times this attitude provokes tensions and misunderstanding however we are of the opinion that out of this field of tension between Order and Conflict situations the elements arise that enable us to have a clear and better view on the future of mankind and the outlines of future models.

Without deliberately aiming at a theatrically staged and directed play of Order Conflict and Counterconflict Werkgroep 2000 is in this way a reflexion of the incomplete society in which we live. The Group's Collaborators thus use as their future method agreement in disagreement. They are aware that it is impossible to stand apart from the problems and the distortions involved in today's massive breakthrough in the technical fields and in the increase in tempo which this means and in which man threatens to be overwhelmed. In our working methods we do not take refuge in the ivory towers of Science but on the

contrary we take hold of the conflict situations and break through them not just to increase our own awareness of the Conflict with today's society but also to share the results of this experimental and learning process with society. Those who work with Werkgroep 2000 are aware that they are not to be considered as members of an interdisciplinary institute that lays down the rules of tomorrow's society. Werkgroep 2000 pretends to be a workshop that evaluates developments resulting both from Order and from Conflict if necessary stimulates them and puts them in the context of future developments. This method has not made it easy for us financially because independence is a must and also in our working conditions in that tumultuous creativity in the field of tension between Order and Conflict often costs us a lot of headaches—though it also brings us new impulses and new perspectives on future evolutions.

If you ask us about the future we shall not offer you predictions but answer that men must rather be aware of it in order to have their say. In this we are modest. We see ourselves merely as part of a process of evolution mainly intended to stimulate awareness of the future and to follow the development of society in a critical way. We reject out of hand predictions about some fixed society of the future that is unacceptable for today's thinking and would rule out the possibility of making—in the light of alterations in society—those changes which might seem necessary or possible at any given moment. An approach to the future can only start from today's society.

Typical of this society is the disturbed relationship between man and technique and the tensions to which it leads. Werkgroep 2000 seeks to stand in the middle of this situation and on the contrary does not avoid undergoing these tensions. For that it must remain independent not only from the dominant streams in society but also from the counter currents they may provoke. We see both of them as components of a single reality. It must be clear that Werkgroep 2000 is not specifically interested in canalising such tendencies but seeks to show what potential they have for renewal.

In the framework of this approach lying between science and fiction Werkgroep 2000 has a project in hand in the field where it seems that futurology is in need of the most important and basic elements for long term planning. Briefly decisions making bodies in the public and private sectors often work with limited and inflexible techniques for long term planning. Statistical methods and even Delphi techniques fall short when it is a matter of setting goals especially since we have not an adequate picture of future environmental orientation. Then too these planners work in their own fields and do not have the power to apply interdisciplinary methods to widen and deepen their techniques. Our powerlessness in this field is increased by the aggressive domination of computer techniques over human contemplation. In the real sense of the word cybernetics is a rapid and ruthless processor of facts leaving out nothing and none and it threatens to dominate and to take over the future of mankind. We are in great danger of losing a general view over the possibilities and desirability of fundamental changes.

Against this background Werkgroep 2000 is promoting interdisciplinary research around the basic elements from which a totally new concept and methodology of long term planning should start. We do not pretend to produce a new technique but we hope to find on the way a system of thought which leaves

ample room for achieving a flexible and evolving form of long term planning

Within the framework of this studyplan which is to nourish a series of publications we shall continually be describing alternative future forms of society and in connection with this evaluating the future of the human environment Therefore it should be clear that this studyplan is not limited in time but is a continuous process The general studies namely the study of alternative Forms of Future Society and the study of the Future of Human Environment will lead on to specific practical study projects A project on Health and Human Welfare belongs to one we have actually in hand

In addition Werkgroep 2000 rules a wider series of publications not just for the happy few who want deeper studies but also aiming at providing the wider interested public with short striking publications giving the possible lines of future development In March this year we celebrated our fifth anniversary and plan now not only to publish in Dutch as hitherto but to draw attention to futurology publications from all over the world in a monthly *Documentation Bulletin on Future Research* to be published under our auspices I can show you the first issue which appeared just before I left for Japan It is the result of co operation with many institutes and individual researches in east and west and I do hope that in the course of this congress many of you will agree to co operate with us in order to give this *Documentation Bulletin on Future Research* the intention for which it is meant for namely to be a humble but trustworthy guide in the overwhelming stream of publications in the field of futurology Some specimen of this Bulletin are at your disposal for inspection

Our International Documentation Centre which we have built up over the years in the Netherlands as well as in Austria The Institute for Langfristplanung in Vienna and which backs the new Bulletin is also open to all forms of exchange and collaboration

#### ACADEMY FOR RESEARCH ON FUTURES/SOCIETY FOR RESEARCH ON FUTURES (Denmark)

ARNE SØRENSEN, *Secretary General*

There are two closely linked organizations—*The Academy for Research on Futures* founded in August 1967 and the *Society for Research on Futures* which dates from February 1968

The Danish Delegate to the Congress in Japan will be Mr Arne Sorensen who from the beginning has served as Secretary General of the Academy and President of the Society

The President of the Academy Professor Thorkil Kristensen (until 1969 Secretary General of OECD) will spend one day at the Congress and will give one of the Evening lectures

Room 667 in the Congress building has been allocated to the Danish organizations

#### The Academy

The Academy has been developed as an interdisciplinary scientific group reaching all the way from Metallurgy to Literature There are now Fifty One members mostly Danes with corresponding members—so far—in Belgium France Norway Sweden and the United States (Among the participants of the Congress Dr Peter Menke Gluckert OECD Paris and Professor Johan Galtung Oslo)

Until now the work of the Academy has been financed by foundations and this year in respect to a special project by the Scandinavian Governments

#### The Society

Invites individual and collective members mostly of equal competence to the scientists of the Academy (Leading people in Government Industry Labor Agriculture Education etc)

Research projects and other activities are being developed *through a dialogue between the two organizations* In this way the experiences of scientists and practitioners will be applied simultaneously

Some of the projects on which we are working for the time being are of a national character—such as the Future of Danish Foreign Trade and of Danish Agriculture while others have international aspects Among the latter are several on which we should very much welcome cooperation with Future Research groups of other countries For instance Man in a Changing World — Information/Communication — The Crisis of big Cities

The Academy and the Society are very much aware of the fact that Future Research becomes meaningless unless it be applied to problems and solutions of a global nature

#### Futuriblerne

The periodical *Futuriblerne* is published by the Society (in association with Bertrand de Jouvenel's Organisation Internationale Futuribles) A large number of the contributors are from other countries and the Danish delegate should very much welcome the opportunity of talking with other participants at Kyoto about the possibilities of receiving articles from them

*International Conference on the Scientific Methods of Future Research to be held at Aalborg Denmark August 17–22 this year*

The Danish delegate should also appreciate talking with other delegates about their possibilities of giving introductions at this conference

#### UNESCO (France)

ERNEST F WINTER *Director*

You all know UNESCO and UNESCO's work and you of course know that we are not a future research society in fact we are heavily burdened with twenty five years of age However there are increasingly points of contact between

UNESCO's various sectors and future research oriented individuals and organizations. And it is in this respect that I would like to mention a few examples how possibly your own work and interest can relate to the work of UNESCO and visa versa.

UNESCO is very much involved in the preparation of the Second Development Decade of the United Nations. This is a full task for the entire family of U.N. agencies. The entire U.N. system is looking ahead and is drafting this year for the approval of the General Assembly and ECOSOC a ten year plan. It is more than a plan; it is an outlook. What possibly are the priorities for the next ten years for the entire world? I have no secrets to give away by saying that up to now the major input into this outlook of this project has been econometric: has been economic, economic growth, GNP per capita income, etc.

UNESCO itself is valiantly striving to put man into this particular venture to emphasize that if you are going to have this growth of economy, the development of education, wiping out illiteracy, etc., is done for the sake of man's future. However, and this is where a group like yours comes in, however, we have very few resource persons to go to, very few we can call on as consultants in this respect. In as much as so much of the future oriented work is precisely in economic terms—not too slight that in fact man's economic condition has to improve considerably if he is to have a humane future—nonetheless, it is in the area of social innovation, in the area of inventing of new institutions, structures in the area of dealing with bureaucracy, decision making and so forth that we are trying to make an impact in the Second Development Decade.

Furthermore, we have another project in the U.N. family which has drawn considerable attention and enthusiasm from all parts of the world and that is the biosphere program, into which again UNESCO has a very important input. We call it Man and His Environment. We are conducting the first big conference on this in Helsinki in early June. The Man and His Environment project is to go on for ten years also and is mainly concerned with not just pollution of air and water, not only with urbanization and problems of growth of city areas, but most specifically again with working conditions, the rights of privacy, human rights, the social consequences of a rapidly growing population, what to do about population, education, etc., and so forth. These are the problems we consider to be part of man and his environment which is again part of the whole biosphere.

Then we have a third very important area which I have just alluded to. Namely, the question of population. While in Man and His Environment we have input of population, education, of course, there is an enormous attention paid and much money spent on the entire question of population growth and the demographic implications of it. Here again the Population Council of the United Nations is doing an excellent job, demographic wise. And UNESCO's input here again is in terms of what does this really mean to human life? What does it really mean for the choices individuals make for marriage and possible new forms of it? How about family life and its possible new aspects, the rational application of knowledge to one's planning of a family, marriage, and human existence and so forth. These are very often philosophical questions and so we have a number of symposium projects that invite philosophers and theologians to throw light on this. These are three, yet not exhausting, different problems of UNESCO. In or

der to understand how possibly you may relate, let me also mention a bit on the operational end of UNESCO.

We are an international organization which has opportunities as well as limitations. The approximate 120 member states, in other words, the boss of the organization, their representatives meet every two years in a general assembly. The next one is coming up in October of this year, at which time they discuss and then approve, usually with some amendments, the plan proposed by the Secretariat. The Secretariat is located in Paris and is composed of about two thousand professionals. By this I mean men and women who do come from the professions. It is a most experts and impressive congregation of scholars. It is a large post university phenomenon of interdisciplinary activity.

This Secretariat, of which I am a member, as the Director of the Division of the Application of Social Sciences, is one of the sectors of UNESCO. Education, science, culture, humanities, social science, and communication are five sectors in the main involved in the interdisciplinary approach. This Secretariat proposes the document which may number over 300 printed pages. It will be discussed thoroughly and approved. Obviously, the opportunity here is that whatever is approved has a stamp of world approval. That is, nothing is approved which any one state objects to. However, the limits are obvious too. Many things do not enter into this program which possibly the member states would not want a minority group to do. You see here is where UNESCO really needs a group of your kind. There are problems which simply member states will not agree to becoming international topics.

So to conclude with, we have two. I would say relationships, potential relationships. One UNESCO would like to call on the expertise of people involved in future research, particularly where it throws light on particular projects and problems, and two UNESCO might use organizations of your nature to launch projects which it cannot do itself.

#### VENEZUELAN CENTER FOR THE STUDY OF THE FUTURE HECTOR FONT VIALE-RIGO

Change is the most stable element of our times. The world today can be characterized by change, change which in contrast with the last 100 years of great technological advances, tends to be fundamentally institutional. We may say that there is a change in the nature of change. Underdevelopment is increasing in the industrial world and in the Third World. In the industrial world we find human alienation, social disintegration, and civilizational dehumanization. In the Third World we find human alienation, social disintegration (marginality by deficiencies) and incipient civilizational dehumanization.

The gap between economic development of the industrial world, the Center and the Third World, the periphery, is increasing due mainly to unjust terms of trade, monopoly of technology on the part of the industrial nations, structural disequilibriums and deficiencies, and the lack of a global strategy of development.

In the words of Daniel Bell the year 2000 has already arrived for in the decisions that we make now the future is committed

These are the main reasons for the creation and the existence of the Venezuelan Center for Studies of the Future

Taking into consideration the fact that the Center was created only a year and a half ago and that you will receive a detailed report on its activities I shall only attempt here in this short presentation to give you a rapid vision of the conceptual frame of reference that has guided so far its activities

The objectives of the Center are to contribute to the design of the Venezuela of the next forty years to identify the possible futures to contribute to the allocation of priorities to the possible futures to study the futures in relation with the present and the projected situation to know all the available methodology for the study of the future to select and design for Venezuela the most appropriate method for the study of the future to be a permanent forum for the exchange of information about studies of the future to contribute to the accomplishment of the major tasks of a development strategy (I will only list these tasks at the end of this presentation) finally to contribute to the establishment of an integrated multi dimensional multi channel (as the members of the Association of Futurology of Japan would say) modern dynamic balanced world society and of a truly human and universally involved civilization

As one of the reasons for the existence of the Center I mentioned the finding that underdevelopment is increasing in both the industrial and in the third world and that there is human alienation social disintegration and civilizational dehumanization in the whole world today this situation we think calls for a joint effort on the part of the industrial and the third world nations to design and implement a global strategy of development This strategy should be realistic prospective and coherent For the strategy to be realistic prospective and coherent a continual planning process is needed This process must be based on interdisciplinary and international teamwork but in order for the specialists from different disciplines and different nations to actually work as a team it is essential that they reach a minimum of consensus on the development concept This minimum of consensus is part of our conceptual frame of reference and that is why I shall try to present it to you

It is important to note that the development concept has been and is still too frequently confused with growth and expansion whose objectives are essentially economic although in the last few years there has been a marked tendency in the literature to distinguish between these concepts and to recognize in development traits that transcend the economic phenomenon and include social human and civilizational objectives as well

We think of development as a coordinated series of changes for a population and all its components which lifts them from a less human to a more human phase at the fastest rate possible at the least possible cost in the most irreversible form taking into consideration future generations as well as intranational and transnational solidarity

Except for the references to irreversibility to future generations and some other minor changes which I have added it is essentially the definition used by L J Lebet in his book *Dynamique Concrete du Développement*

In the light of this definition we think that development should be goal

oriented coherent homogeneous and self propelled Goal oriented Development is goal oriented when it pursues as its end or basic objective lifting the level of living of the population by means of the conservation or attainment of values not only material but also non material and therefore instrumental and final Development should not be exclusively oriented toward material well being that is having more things it should also be directed towards being more in a metaphysical sense This implies the optimal realization of the potentialities of man through the satisfaction of all his needs rationally ordered There is a hierarchy of needs which postulates vital minimums so that the values of superior order can be achieved In the satisfaction of these needs we should avoid the sacrifice of those values of superior order Development should be oriented towards the raising of the level of human life not only for a part of the population but for all the fractions of the population and the individuals that compose it not only on a regional or national basis not only for the Third World but also for the whole world not only for this generation but also for future generations

Development using a very short definition perhaps the shortest that of Francois Perroux should be oriented toward the elevation of the whole man and of all men On the other hand the revolution that we have to promote in the countries of the Third World is not merely a change of technique from one technique to another from a less advanced technique to a more advanced technique but rather from one grade of civilization to another from a less human and multidimensional civilization to a more human and multidimensional civilization

A truly human civilization demands a certain level of satisfaction of basic needs for all its members but merely attaining this level will not achieve all that should be desired It is possible that an avarice for acquisition could compromise the higher values of the previous civilization or the attainment of the superior values that the new civilization should have Using Denis Goulet's words we would like to state unequivocally that no nostalgic plea is here being entered to keep societies underdeveloped the price being paid by the Third World to remain underdeveloped economically is incontestably high and its misery is dehumanizing its privilege structures crush men's hopes and constrict their horizons of choice many of its traditions perpetuate apathy escapism alienation and ignorance

Development must be coherent Coherency is the result of rational thought and rational action That is to say planning And we mean by planning that process of preparation of a set of decisions on future actions directed toward the attainment of goals by optimal means This definition belongs to Yehzekel Dror and if you do not agree with this definition and would like to take issue with it I shall call on Dr Dror to defend it

Homogeneous development Development should be homogeneous that is it should take into account that which exists and maintain a certain continuity with the past Every society has values which are convenient to preserve and stimulate because they constitute acceleration or equilibrium factors for the development process It is possible to conceive a dynamic equilibrium and because of this there is no justification even from a point of view based solely on efficiency ethics aside for total revolution i.e. that which creates a tabula

rasa destroys everything and aspires to rebuild everything from scratch. This characteristic of the homogeneous acquires special significance if we see this period of change in what is termed the post industrial civilization referring to a possible future change as important as that which caused the industrial revolution in the 18th Century and the beginning of the 19th Century.

Homogeneous development should be the fruit of a process of prolonged and prospective reflection on the totality of the existing economic and social structures and the civilization in the process of evolution. Development should be oriented towards promoting the necessary mental and social changes so that the process of adaptation to technological innovations is compatible with and favorable to the construction of an integrated multidimensional multichannel modern dynamic and balanced society and the establishment of a truly human and universally involved civilization.

Finally in relation with the last characteristic I will just say that by self propelled we mean that it should have in itself the motivation of its permanent impulsion and this impulsion comes from an active participation of all sectors of the population. That was stressed by the previous speaker.

I shall end this presentation by just listing without comment the major tasks of a development strategy without commenting on any of them. I shall do that this afternoon in Section VI. The first task is to know the population and its actual living conditions; the second to appraise functionally the resources; the third to assess the adequacy and efficiency of the economic, legal, administrative and social institutions; number 4 which is the most important perhaps to identify the scale of values of the population and to formulate explicitly the value premises that will determine the selection of objectives and the means to attain them; that is the plan as well as its policy conclusions; Number 5 to analyze the global structures, evolution and tendencies of those structures; Number 6 to construct the synthesis, the diagnosis and the plan; Number 7, 8, 9 and 10. I will escape because they relate only to the implementation of the plan. And for the sake of time I will not even list them. I will just close by saying that in Venezuela we have tried to take a short look behind, a wide look around, a deep look inside and a long look ahead and in so doing we have just started a year and a half ago and we have by no means accomplished it—not yet.

#### **THE PIERRE TEILHARD DE CHARDIN ASSOCIATION OF GREAT BRITAIN AND IRELAND (England)**

MRS K. CROOSE PARRY, *Honorary Secretary*

The work of the Association which I shall describe to you differs considerably from that of the Future Research organizations discussed so far at this conference. I shall not dwell upon the scientific philosophical framework of thought upon which our endeavours are based as you will find it well documented in Dr Bernard Towers' address to this conference and of course in the writings of Teilhard de Chardin which are available in most languages all over the world including Japanese.

The main purpose of the Association is to encourage and assist a general study of the evolutionary process in its entirety from hydrogen to man and beyond and to analyse the portent of this study for the formulation of goals towards which man might fruitfully orientate himself—man learning to see and feel himself as the maker of history and not as the enduring object of history.

The Association is still very young. It was founded in London in February 1966. It is being supported exclusively by the annual subscriptions of its members by ordinary members, student and group members, now counting over 1,200 persons. In addition a live contact is being maintained with several thousand persons and many universities the world over, though of course mainly in English speaking countries through subscription to and purchases of our publications and participation in group study. The Association maintains groundfloor offices and a library reading room in the neighbourhood of the Science and Natural History Museums in the Borough of Kensington with a secretariat staffed by three people and various volunteer workers.

The Association is governed by a General Council and has an Executive Committee of ten which meets every six to eight weeks. The organization is presided over by the Cambridge bio-chemist and sinologist Dr Joseph Needham, Master of Gonville and Caius College and is directed by Dr Bernard Towers, Fellow and Director of Medical Studies at Jesus College, Cambridge and Visiting Professor at California University by Dr Joanna E. Kelley, Director of Women's Prisons in Great Britain, the Rev. Dr Anthony O. Dyson, Principal of Ripon Hall, Oxford, as well as by my husband and myself together with several other members of the Executive Committee. The membership of the Association comes from most diverse professional, social and ideological backgrounds and includes humanists, marxists, christians and jews. It can be said that what has drawn them together is in fact a new awareness of their shared humanity coupled with their common sense of urgency regarding the future of Man as focussed upon by Teilhard de Chardin. They are concerned with *education for the future* and the need for a dialogue across all academic disciplines and political, racial and religious frontiers.

The Association is an educational non-profit organization and is registered as such through the Department of Education and Science in Britain. In the main its activities concentrate on:

- 1) the setting up of study groups
- 2) the organization of one major Annual Conference as well as residential and day conferences and lecture series
- 3) the publication of a bi-annual journal THE TEILHARD REVIEW
- 4) the publication of a book series THE TEILHARD STUDY LIBRARY
- 5) the production of film material and the promotion of radio and television programmes
- 6) the furtherance of contact and cooperation with other similar educational bodies and future orientated organizations the world over.

There are to date about forty *study groups* in Great Britain and Ireland which operate autonomously, obtaining speakers and study outlines through the London office.

The *annual conferences* serve as a platform for a many-sided debate and the titles of the first four annual conferences will help you to visualize their scope.

They read Evolution Marxism and Christianity Man the Maker of History Mankind Evolving China and the West and Towards Human Maturity—Personal and Collective

Regarding our *publications* eight issues of THE TEILHARD REVIEW have been published and four books in THE TEILHARD STUDY LIBRARY the last one being a critical reply to the reductionist treatment of man particularly in Desmond Morris *The Naked Ape* In conclusion I would like to say that rather than being an attempt by specialists to forecast the future or to outline possible alternative futures the Association is a *living experiment* the material for which is the membership Sharing a common concern for the future of man and being open to the full implication of Teilhard de Chardin's vision of Man our members tend to reach a consensus that is that in his future development Man *must* choose to be more and not just to have more In choosing values we would therefore support Gerald Feinberg in making increased consciousness the prime goal for the future but a consciousness which strives continuously to discern and formulate what will lead man to 'being more'

At the Fifth Annual Conference of THE TEILHARD DE CHARDIN ASSOCIATION OF GREAT BRITAIN AND IRELAND which was held on October 16th and 17th 1970 under the title THIS RUNAWAY WORLD—CAN MAN GAIN CONTROL? a special meeting of members of the Association approved a change in name to

#### THE TEILHARD CENTRE FOR THE FUTURE OF MAN

This new name was chosen to reflect Teilhard's concern for the future of Man and his stated wish that having studied his thought its meaning for the future will depend on the extent to which we go beyond him

THE TEILHARD CENTRE FOR THE FUTURE OF MAN is an educational project Its object is to make people increasingly aware of their responsibility for directing the Future Evolution has now reached a critical stage and there is a growing recognition that we must build a system of values as a guide for decision making if worldwide catastrophe is to be avoided The teilhardian method with new insights and gathering momentum works towards settlement of modern political racial religious and philosophical conflicts It offers to mankind the possibility of real social union in many-sided endeavour because it is based on a scientific examination of the total phenomenon of Man

To further underline the orientation given by the new name of the Centre the following having given their personal agreement have been elected Vice Presidents of the Centre

Professor Theodosius Dobzhansky Professor Roger Garaudy Canon David E Jenkins Dr Robert Jungk Professor Margaret Mead Professor Raymond Panikkar and Professor W H Thorpe

As previously mentioned the President of the Teilhard Centre is Dr Joseph Needham bio chemist and leading sinologist Master of Gonville and Caius College Cambridge Dr Needham is one of the contributors to the latest volume in THE TEILHARD STUDY LIBRARY which was published in October 1970 under the title *CHINA AND THE WEST MANKIND EVOLVING*

This book is described by Bernard Towers joint Editor of the series in the following words

The problems that face mankind evolving loom larger with each year that passes there seem to be two major areas to which not nearly enough attention has as yet been given This book explores them both One is the problem of the possible dehumanisation of social structures through technological advance and the other is the problem of China vis a vis the Western powers

The contributors Robert Jungk Ernan McMullin Joseph Needham Joan Robinson Stuart Schram William Sewell and Bernard Towers have combined to provide a rich and authoritative account of the new China and the consequences of evolution and revolution in our time The authors analyse the threats and promises of technological change in contemporary society and consider the urgent need for mankind to take full responsibility for its future

The book can be obtained from the Teilhard Centre for £1 90 (U S \$4 70)

For further details about the Centre's activities and publications please write to

The Hon Secretary  
THE TEILHARD CENTRE FOR THE FUTURE OF MAN  
3 Cromwell Place  
London S W 7

#### IRADES INSTITUTE FOR APPLIED RESEARCH DOCUMENTATION AND STUDY (Italy)

ELEONORA MASINI (Mrs)

IRADES is a non profit organization whose principle aim is to offer through suitable research and necessary study a possible knowledge of the man of tomorrow in the social environment in which he will be called to operate

The results of the Institute's work are directed

- to all whose cultural interests are future orientated
- to all who have direct or indirect responsibility in the education of the man of the future and who have an influence in a particular or general course of society's development (political and industrial managers educational responsables and leaders in the various fields)
- to the man who feels his responsibility in the future of society and of his own group

That is to say that IRADES proposes to offer useful elements for the estimation of social change's trends so that man in his wholeness and as active participant of his own developing being is able to partake knowledgeably of tomorrow's life

What has induced the creation of IRADES? The rapid and inter related changes of today's life the complexity of such life have brought man in search of a new equilibrium toward which he must first of all be conscious of the changes and be able to acquire his position of leader in social dynamics He must be made aware of the choices he must take today which are determining

for tomorrow and this is especially true for the decision maker. The decision maker must be aware not only of the consequences his actions may have in his own specific field but in other fields as well and of the social implications resulting therefrom. To answer such requirements a group of private people coming from various disciplines and professional groups decided to create IRADES whose principal study, as I have said, is consideration of the man of the future in his social environment.

IRADES aims are the following:

- 1) the systematic knowledge and estimation of modern Italian society in its structures, behaviours and values within the limits of the interests chosen by IRADES through a comprehensive view which allows the exploration of the emerging trends of present and future changes
- 2) the promotion and carrying out of a program of forecasting and operative research in cooperation with Italian and international centers and experts
- 3) to supply the results of its research and studies to all decision makers in social, economic, political and managing fields, in this way helping the decision makers to become conscious of their social and professional duties, the Institute's studies being directed towards action.

The working method with which the studies are carried out is essentially interdisciplinary.

This has motivated the internal structure of the Institute whose working method is guaranteed by:

- study centers
- documentation and information section
- statistical section
- applied research section
- planning and organization section
- publications section
- courses and meetings section
- feedback section

As for activity, IRADES was founded in 1967 and started working during the second half of 1968. By the end of 1969 and the beginning of 1970 its work is in full development. The achievement of full operative efficiency is expected for 1972.

IRADES activities can be divided in:

*documentation activity*

—establishing an information bank for collecting in a coordinate and systematic way data, information and news useful for the Institute's studies and for anyone who might have the same interests and purposes

—the establishment of a forecasting basic observatory of social changes

This observatory consists of a systematic disposition of the most important data for the research of present social trends in Italy, related to the interests and the Institute's point of view, aiming to become a center for social warning.

*study and research activity*

promotion and fulfilment of research and studies within the interests chosen by the Institute, centered on

*the family* study of trends in roles and interrelations

*contemporary culture* study of thought that has an influence on human values tomorrow

*mass media* study of media of thought and values which have an influence on the man of tomorrow

*technology* study of technological products influence on the man  
*information and formation*

consists in publication of books, reviews and bulletins, organization of courses and meetings related to the problems object of the studies

*control and feedback*

the response of IRADES activity is systematically controlled by the Institute

*on request*

documentation, research and studies, elaboration of data within the interests chosen by the Institute may be supplied on request.

As first accomplishments I will indicate rapidly that IRADES:

- 1) has organized a library and a newspaper and periodical library specialized in the Institute's sectors, complete with author and subject filing
- 2) has planned and carried out a study aiming to determine the future position of man, family and tomorrow's society. The study was carried out by a working group and went through phases of which one was a series of lectures in which the reactions of various people were collected at an expertize level and at an operational level. Three essays have emerged from this work: *Man, Images, Civilization, Machine, Civilization, Family and Technology, Society, Techno-structure and Management*, and the result has been published in a book: *Society, Technology*.

Another work is *Forecasting of social changes, ideas, men, activities—Documentation 1970*, with an introduction on the part of J. Wellesley Wesley (executive director of *Mankind 2000*). IRADES forecasting editions, Rome.

Another accomplishment is the bibliographic bulletin containing files of international size (7.5 by 12.5) with bibliographic indications and abstracts of books and articles selected from the most important Italian and foreign reviews specialized in indicated sectors.

The bulletin is published every four months in Italian and in English.

Another study has been carried out for the purpose of explaining the historical forecasting concept, of comparing the various methodological tools adopted in different times and different places and of focussing the philosophical and ethical principles of social change forecasting and operative studies. The study will be published shortly.

## FUTURE-ORIENTED RESEARCH ORGANIZATIONS IN FRANCE

(France)

SERGE ANTOINE

In numerous countries, over and beyond individualities interested in long term



considerations or the benefits of prospective groups which are more or less specified are beginning to carry out more systematic work on the future. Some of these groups are autonomous, others belong to firms or financial groups, some function within the framework of universities, and lastly some stem from the state. The latter is the case of the SESAME groups in France, responsible for the preparation of a programme concerning the country's long term development. The system into which it has been compiled is here described in broad outline.

During 1968, after various missions abroad and numerous interviews with long term survey experts from public and private enterprises, the French officials for Area Development contemplated the feasibility of a framework of considerations that could be used as a reference for both long term policies and geographical decisions made by the authorities at a national or regional level, or in any other specific domain. Thus, at the end of 1968, a System of Research into Development Programmes (Système d'Etudes du Schéma d'Aménagement) (or SESAME) was created by the Area Planning and Regional Action Delegation (la Délégation à l'Aménagement du Territoire et à l'Action Régionale) (DATAR) in close liaison with the head office of the French Plan (\*).

At present, the French Area Development programme can be defined as follows:

- a group of programmes concerning the locating of major outfits, having an influence over the country's geographical organization (roads, waterways, telecommunications, airports) and offering the highest possible degree of coherence and coordination;

- long term development programmes of important geographical areas (large urban regions, city areas);

- a series of coordinated long term policies affecting area planning (transformation of rural areas, urban development, economic investigations, etc.);

- methods and means of long term analysis, forecasting of the future and gauging of effects, progressively improved and made operational, and placed at the disposal of those in charge of public and private enterprises.

#### AREA PLANNING A PROSPECTIVE STEP

The SESAME can therefore be defined as a system allowing decisions made concerning area planning to be more and more accurate, i.e. to be made with a better knowledge of the foreseeable future, and of the new possibilities and restraints that they will entail from the geographical point of view, and of the commitments to which they will lead in time.

Such a system could not be perfected autonomously, i.e. independently from the organisms and authorities where the decisions involving the future are at present being prepared. Nor must it function in the abstract, i.e. without taking the problems of the decision makers into account. It must, on the contrary, lead those who have to make decisions to take into consideration, in their analyses and judgements, the more or less near future that their intervention risks conditioning. Ministries such as the Ministry of Agriculture, the Ministry of Engi-

(\* Since 1967, these two government departments have been linked up with a Secretary of the Plan, and Area Development in direct contact with the Prime Minister.

neering, the Ministry of Transport, the Ministry of Telecommunications, the national enterprises (Electricité de France, C.N.E.X.O., Société nationale des Chemins de fer français, etc.) as well as private enterprises are therefore directly affected by the SESAME.

However, in order for more prospective to be brought to bear on decisions, it is necessary at the same time that the method of prospective itself be more specific, more refined, and adapted to the particular needs of the socio-economic development of geographic areas. This double step has led to the organizing of two series of work groups:

- on the one hand, the four groups of system analysis, development schemes, technological previsions, and models;

- on the other hand, the groups directly preparing the ministerial programmes at medium or long term. At present, there are three of these last groups: conversion of rural areas, tourism, tele- and economic data processing. All of the groups are backed by a data processing mission sponsored by the Institute of Research and Applied Data Processing (I.R.I.A.). The latter, thanks to the data accumulation system, puts the appropriate data processing tools allowing the treatment of them at the disposal of the Area Planning and Regional Action Delegation (Délégation à l'Aménagement du Territoire et à l'Action Régionale) and the Plan.

#### SYSTEM ANALYSIS FOR THE PREPARATION OF COMPLEX DECISIONS

The purpose of system analysis is to help those in charge to determine the best plan of action from several possible alternatives, by means of a methodical investigation.

This is proving to be particularly complex in the field of area planning, where every decision necessitates the taking into consideration of the present situation and the long and medium term prospects from various points of view: economic, social, geographical, and technical, when the solution to the problems nearly always depends on concomitant decisions of those locally, regionally, and nationally in charge of public and also private enterprise. Such is the case of the policies of coal field conversion, the creation of an industrial and harbour zone like that of Fos, and of the preparing and realization of the guiding programme of development of the Lyon-Saint-Etienne metropolis, for example.

A certain form of system analysis is already in operation in the administration of budgetary problems: it is therefore called the P.P.B.S. (Rationalization of budgetary selection) (Rationalisation des choix budgétaires). Area planning, however, necessitates the perfectionment of new methods. Indeed, more than in any other field of political action, analysis as systematic as it can be cannot be complete, and calculation allowing the numerical comparison of the advantages and costs of a decision are not, at present, always possible. Besides, satisfactory means of foreseeing the future or determining in advance the best policy are still unavailable. Each case therefore leads to diverse possibilities, and several possible policies being envisaged, without being sure that all the possibilities and possible policies have been investigated before the decision.

In spite of its limits, system analysis still permits—and will permit to an even further degree in the future—a wider comprehension of problems and a better

valuation of selections to be made than the simple intuition or advice even grounded of the traditional work committees

The SYSTEM ANALYSIS GROUP is therefore naturally led to look for the methods best adapted to area planning. This systematic research is one of its missions. At the same time it has undertaken a series of concrete investigations on several aspects of area planning policy in order to determine the aims which prompt it in each case and to determine the efficiency of the methods adopted in relation to these aims.

Thus is the case concerning urban policies trends taken up by the O R E A M (\*) for the elaboration of guiding programmes for balanced metropolises here the analysis bears on the white books which permitted the preparation of these programmes. Likewise the systematic examination of state interventions concerning aid to the industrial localization an examination which could lead to the specifying or the modifying of this subject's present policy even to the proposing of new incitement measures. Besides this the examination is going to contribute effectively at the same occasion to the establishing of a card index of aid granted up to the present time to the industrial enterprises which will form one of the basic elements of the future bank of information on industrial activities organized by the Ministry of Industrial and Scientific Development and the I N S E E.

Thus the analysis group is not only open to DATAR but also to the different ministries and organisms concerned with improving their long term decisions and with referring to geography.

#### AREA PLANNING SCHEMES OR THE GEOGRAPHICAL IMAGES OF THE FUTURE

In order for system analysis in the field of area development to estimate in better conditions the policies programmes area organization schemes or organization schemes of large engineering outfits it is absolutely necessary to find methods allowing the drawing up of feasible images of our community in the decades to come images registered in the given geographical space of our country.

Such is the object of the area development schemes through which the different features of France in around the year 2000 can be described as we can imagine them to day as well as the pathways which link up the present situation with those of the future.

The conception of such a method of approach is quite simple on the whole by contrast its realization proves ticklish. Complete scientific exactness in the general sense of the term cannot indeed be claimed but operations are to be carried out with the maximum amount of objectivity imagination playing its part but kept strictly under control calling numerical data in but liberally accepting qualitative judgements not desiring to be too mathematical but including the most diverse aspects of the French community etc.

The method of area development schemes is gradually being perfected. The

(\*) O R E A M organism of metropolitan area research. In France five organisms of this type exist for the conurbations of Lille Roubaix Tourcoing Lyon Saint Etienne Grenoble Metz Nancy Nantes Saint Nazaire and Marseille.

construction of trend schemes through which research in this matter has begun has raised numerous problems in the conceptual field and as regards the practical methods of realization. At the present time they seem for the most part to be resolved.

The trend scheme is made up from present trends established in the overall socio economic system of our country. But it is distinguishable from simple extrapolation. The prolongation of the trends leads as a matter of fact to the appearance of pressures either in the production system or in the relationships between this system and the sociological structure of the country the pressures express themselves in a concrete way by disturbances in the functioning of the national economy and in the social and political situation.

The trend scheme is distinguishable from other types of schemes in that each time during its elaboration that tensions—capable of bringing into question the whole existence of the socio economic system—appear they are absorbed by wilfully and in the appropriate way bringing an influence to bear on the community's institutions and on them only. The promoters do not bring any value judgement of course on the real possibility of such a regulating action they only intend to define with precision the hypotheses and compulsions from which the scheme was made so that from then on it can serve as a reference when it has taken up its final form it will be possible to measure up other schemes or to estimate the effects of a determined policy of area development.

Using as a base the extensive investigations carried out by the research department (\*) at the time of construction of the trend scheme the GROUP OF DEVELOPMENT SCHEMES will from now on be able to tackle a new stage of its research the construction of contrasted schemes which are differentiated from trend schemes by the intervention of incomplete or total policies of previously defined area development.

It will not however abandon the trend scheme which it will progressively endeavour to feed with figures or numerical indicators with the hope of subsequently treating the given information by data processing methods. It is also to endeavour to perfect the processes of constructing simpler schemes consequently fit for use by the national regional or local administrations as well as by other organisms of public or private enterprise.

#### PROVIDING FOR TECHNOLOGICAL INNOVATION

The construction of schemes necessitates the taking into account not only of the evident trends of the present French community but also the taking into account of phenomena of all kinds in particular the technical innovation which may appear in the years to come. Certain of them in the scientific and technical field will mark the development of the latter and will have an influence on the geographical organization of our country i.e. the distribution of men and activities as well as the way in which national ground space will be utilized.

The expression technological innovation is here meant in the broad sense. It may concern a particular invention or discovery a new technical process or a

(\*) OTAM Omnium Technique d Amenagement (Technical Development Omnium) branch of the S E M A (Societe d Etudes et de Mathematiques Appliquees = Society of Studied and Applied Mathematics).

combination of the two leading to a new way of approaching a problem and bringing a solution to it

In contrast to the research carried out concerning the future by the Anglo-Saxon research workers the SESAME does not give preference to technological factors. These are never imposed on any community by themselves or by a sort of autonomous process. It is the community itself or certain of its agents which gives them their true dimension.

The current problem facing the SESAME is the following: what technological innovations, the appearance of which can from this day on be foreseen will influence the development of ground space? The essential difficulty concerning this does not lie in the inventory of foreseeable innovations in the thirty years to come but in the assessments of their importance as regards the policy of area development in France. This importance may result from the date of appearance of an innovation, from the speed of its perfectionment, from the advantages its users accord it, from its direct or indirect influence on the organization of ground space, from the means necessary for its realization, from the nature of the problems which it can help to resolve, etc.

Assessment methods are to day still almost nonexistent in the sphere of area development. It is therefore advisable to find them and perfect them. In order to do so with present knowledge as it is, two paths seem open: one consisting of drawing up a sort of catalogue of the foreseen innovations and of applying to them certain previously defined criteria relating to area development, the second consisting of finding more certain, more detailed and more systematic criteria of estimation, by carrying out several case analyses, for example, the production of food products, the synthesis and utilization of agricultural produce or cattle raising to new ends, and again for example, the probable effects of the transformations of construction technology on the morphology of habitat and transport of raw materials for construction. It is along these two simultaneous pathways that the GROUP OF TECHNOLOGICAL PREVISION works.

The inventory of the innovations and their assessment will not be sufficient. The fact that the community or certain of its agents finally give particular shapes and a certain sense to technological innovations will involve the group in asking itself which actions, which incitements, which policies could speed up the appearance and bringing into play of innovations, considered useful or indispensable from the point of view of area development, and could slow down the others and direct an innovation towards a favourable use rather than a use which would be less favourable.

Naturally for such work to be undertaken it is necessary to wait until the research has reached a more advanced stage.

#### “MODELLING”

System analysis, development schemes and technological provisions necessitate the intervention of mathematical or econometric models. The models known at present adapt badly to the needs of area development: indeed they are often lacking in geographical dimension. In a schematic way, for example, the economy of a country can be considered as being balanced in the aggregate from the point of view of employment, whereas zones of underemployment and non-limitrophe zones of overemployment coexist. France has known, knows

and will know such situations which are particularly important to foresee and to put in order in a rapidly changing community.

This example is not isolated: the bottle necks and hold ups in development are most often the results of geographically localized or localizable phenomena. Rural renovation compelled recognition in Brittany and the Massif Central, the textile crisis weighed on the Vosges valleys and the North region. South west France is suffering from too numerous tertiary activities which are inadapted to the needs of a modern economy, etc.

The construction of models will not miraculously set the difficulties in order. Many do not depend on mathematical equations and even in the case where applied mathematics can be of help, it will not be conclusive.

Nevertheless, a number of economic processes follow from techniques, the ways of which can be studied, made known and interpreted more or less by models.

Where complexity impedes their utilization in full and the use of computers, it is sometimes possible to resort to simulation games, where thanks to the intermediate decisions of players, an endeavour is made to retrace a reality which rigorously baffles strict laws. And where the simulation games themselves seem to be ineffective or prove too complex, it is possible to form a more complicated structure in which models and simulation games appear like parts of an incomplete jigsaw puzzle, and which system analysis is able to use.

It is therefore understandable that there is a necessity to make up a MODEL GROUP with the double mission of finding models meeting the requirements of area development, and of providing the different groups with the support of its proficiency in interpreting or transcribing certain of the development of distribution techniques, which they were able to reveal in the course of their own work.

This group is at present investigating two models of socioeconomic development: one at national level, the other at regional level, which in fifteen years will permit the testing of the area development decisions. If this project proved workable, which should be known before the middle of 1970, a new and powerful tool could be at our disposal around 1972-1973. If it was not workable, at least the description of an aggregate system would be available, in which incomplete models could be inscribed, for example, the localization of firms, migrations, balance of employment from the local and regional point of view, the attractiveness of regions, etc.

#### GROUPS OF INTERMINISTERIAL PROGRAMME PREPARING

The other groups, without disregarding the method aspect of general bearing which they can draw from their research, have a less exploratory objective, which is centred on the preparation of inter-ministerial decisions.

The mission of the RURAL CONVERSION GROUP is to prepare, along with the authorities concerned (Ministry of Agriculture, DATAR, Plan), an inter-ministerial committee, forecasted for this object in September 1970.

The first phase of this work consisted of analysing the present situation of rural France and its development under the influence of urbanization and transformations which are taking place in the activities and economy of agriculture. It is based not only on the numerous existing documents on the subject, but also on the more precise investigations into phenomena noticeable in the

zones where urban and rural areas meet where phenomena are appearing fore shadowing those that will be known by the rural urban areas of the approaching decades

At the same time the group attempted to classify the possible policies of converting the rural areas by large families the main characteristic points of which it defined The two or three types of policy to which the government authorities would have given their principled preference will then form the proposed subject as regards the means of their being brought into play The group will endeavour to give numerical indications concerning the rural community inter sectoral balance population distribution income etc between the regions total costs for the national collectivity and for the state of the policies retained by the authorities

The TOURIST GROUP originates from a double concern to initiate a rapid examination of the effects of the large regional programmes of touristic development and to equip the government with tools allowing it to cut down the selection of touristic development policies

The Alps Languedoc Roussillon the Cote d Aquitaine and Corsica have been the subject under various headings of large voluntary and public efforts during the past years Large pecuniary means have been or are going to be liberated Meanwhile the most desirable policies to follow in the four zones in order that they meet to the utmost the French and international touristic demand which will appear in the years to come are still not clearly foreseen

It was known that this demand would be considerable France has got beauty spots at its disposal they have therefore been developed The moment has now come to perfect strategies to promote the best use of the endeavours made by both parties i.e. the orientation of both French and foreign tourists towards the regions henceforth equipped to bring in a considerable contribution to the national economic expansion and to assure the regions concerned of a growth in activity and income The investments made will not assure just them of the expected results the Alps are not solely French there are islands other than Corsica in the Mediterranean and sunny watersides other than Languedoc Roussillon

These are the strategies that the tourist group is going to strive to recommend to the government towards the end of 1970 or the beginning of 1971

The research it has undertaken should also permit it to draw some conclusions about the consequences which might arise from a touristic policy given to employment exterior receipts and the development of the balance of payments regional and national revenue etc In its most elaborated phase this work could facilitate the perfectionment of a model of touristic policy amenable to data processing

The large management organisms public or private feel the necessity of having at their disposal a large quantity of information of processing it and communicating it The data processing gear can assure the accumulation and processing of data and telecommunication the transmission of it More especially tele data processing networks will allow distances between data calculation of data and utilizers to be cancelled out it will constitute an important factor in the country's geographical development By doing away with the delays of waiting and the distance between the formulation of a problem and its

solution between the decision making at a given level and the knowledge of its consequences at other geographical levels the data processing gear and tele data processing will be the factors of regionalization and decision coherence

In 1969 the TELE DATA PROCESSING AND ECONOMIC DATA GROUP took stock of the beginnings of policies of the existing policies considerations or investigations in each of the departments concerning data processing it gave its attention to the long term development prospects of data processing and the development of data processing systems It is now going to propose the first principles of a territorial policy of data processing capable of upsetting the present trend of concentrating in the Paris region the means assuring the treatment of data

Besides the time has come to carefully investigate the conditions in which the data bank network should open out in France The data processing experiments going on in various departments (banks of urban data economic data or managerial systems) seem as a matter of fact to spring up and get into working order in a relatively independent manner

If in a very short period of time the general structure and guiding principles are not formed of a system to connect up these banks the number of which is rapidly going to increase the risk is run of seeing the consolidation of the administrative divisions inherited from the far past and from now on insurmountable for a long period of time due to the bias of data processing Far from having a liberating effect data processing would contribute to bringing affairs to a standstill inconsistent with the economic and social development

The Data Processing Delegation and the Area Planning and Regional Action Delegation (DATAR) are therefore going to launch in liaison with the National Institute of Statistics and Economic Research (I N S E E ) a large investigation into this subject which will be followed up and verified from the technical point of view by the tele data processing and economic data group the conclusions of which should be known at the beginning of 1971

#### A LIBERAL SYSTEM OF RESEARCH

These research groups to which other groups can gradually add needs and possibilities form a coordinated whole Yet the SESAME is more than this Open flexible varied in its procedure and resources it is the referential which various utilizers will be able to call upon and various research organisms use it will pay particular attention to experiments abroad and will base itself whenever it can on private or public organisms existing in the regions and of which the concerns and research bear on the long term view

It is thus that the prospective research carried out since several years ago by the Metropolitan Area Research Organisms (O R E A M ) or under the auspices of DATAR and the Ministry of Engineering and which have led to the working out of guiding plans the first of which have already been taken into consideration by the government already fore shadowed SESAME the exchange of ideas of the research groups indicated above and the O R E A M therefore corresponds to a necessity as much as to logic

In the same way the research referring to Façade méditerranéenne or the research on social perspectives which are soon going to be organized in the form of a group co operation between universities and research departments should

without entering into the orbit of SESAME contribute considerably to the building up of a programme of development for France supplying it with images of tomorrow's community over and beyond the programme of development they are intent on improving the long term considerations of which the collectivity has a need

The SESAME has been in service for a year. The complexity of its task is plain and it must continue to extend its field of investigation. But at the same time it must be open minded. The building up of long term images of the future involves a permanent observation of the country, the detection of deep needs and aspirations. The limits of life in this respect entail so many question marks that it conditions to a great extent the prospective calculations. In order to allow this communication, the results of the SESAME's research will regularly be published at THE French Documentation in the collection Travaux et Recherches de prospective ( Prospective Research and Investigation ) Newspapers, journals and in particular the journals 2000 Analyse et prevision ( Analysis and Prevision ) and Prospective radio and television will be used for general information. A meeting centre has been organized for research workers in Paris and a foundation for the prospective research work has been organized within the Salines Royales de Chauvignelles (Doubs) the LEDOUX foundation. This foundation will receive the second international conference on advanced techniques, the object of which will be more especially the relationship between data processing and area planning. This conference is organized by the collaboration of the Data Processing Delegation, the Area Planning and Regional Action Delegation and the College of advanced techniques.

Such an apparatus should ensure a rapid advancement in the course of 1970. In the first months of 1971 a group of documents forming the first outlines of the general programme of development in France will without doubt be submitted to the authorities. Thus 1971 could also be the year of putting into shape a more coordinated structure of different regional and sectoral images of France and long term political principals. 1972, the year of the general appraisal of these policies at different levels of decision and of the geographical schemes which sometimes accompany them, i.e. a first experimental utilization but inclusive of the means put in position by the SESAME.

### THE SCIENCE AND LIFE RESEARCH CENTER (France)

HENRI BIANCHI, *Director*

Under the name of Science and Life Research Center, a forecasting Institute was founded in Paris in 1969. This organization endeavors above all to be a group of reflection on the long term evolution of Society and especially on the problems arising out of technological development. Its character is that of a private institution with non lucrative objectives.

#### A RESEARCH GROUP

The Center's activities originated in a small pluribranch research group

financed by the EXCELSIOR PUBLICATIONS, a French press organization editing in particular the wide circulation magazine Science and Life.

At the system level, as at the realization level, the Science and Life Research Center set itself the dual objective of constituting an experiment and comparative experience station. This dual objective conditions its work methods and its organization.

#### FOR AN EXPERIMENTAL REFLECTION ON SOCIETY

An experiment station first of all, the Center is concerned with the adaptation of methods currently used in the field of technological forecasting in the fields of socio economic and socio cultural development.

(Morphological research, scenario writing, contextual representation etc. on the one hand, and on the other, the utilisation of cross impact matrix, relevance trees etc.)

An attempt to perfect a system of social indicators comprised a first experience at the Center, presented in September 1969 under the title of Model for the Future, and was carried out with the cooperation of the French Petroleum Institute's Computation Center.

The purely experimental nature of this research was therefore emphasized. More recent work led the Center to formulate a methodology of contextual analysis of social phenomena whose application to the problems of leisure and of information are presently under study, for if disinterested research is its vocation, the Center tends to rely materially on the role of advisor which it plays vis a vis private companies and various organizations.

These two aspects of the Center's activity—general reflection and counsel—find their common justification in the growing importance for our companies of environment problems and the increasing evidence linking technological economic and social development.

#### FOR THE COMPARISON OF EXPERIENCE

The Center also endeavors to be an experience comparison station by means both of research workers' meetings organized under its auspices and the organization of study sessions.

In collaboration with the Paris Chamber of Commerce, the Science and Life Research Center took the initiative of creating a laboratory of forecast comparisons, thus launching the idea of comparative forecasting. Institutions whose vocation is to experiment actively with the social forms for developing the future. The laboratory's essential task is to institute a method of continuous comparison of objectives as well as the decisions taken, the assessments of constraints between the various social actors and deciders whose concepts and aspirations diverge but which in the long run become involved in a socio economic context definable as the consequence of their divergencies and options (the State's options, company and corporation options, consumers and citizens options, the salaried workers' options in the various fields where these competitive choices occur).

A station then for comparing work methods as well social groups and aspiration, this laboratory desires to promote at once a certain state of mind and new

methods of approach to the socio economic problems which present themselves in our era of accelerated change

#### AT THE CROSSROADS OF SOCIAL REFLECTION AND FORECASTING

The renunciation of social theories in behalf of experimental studies of context and of less ambitious rational forecasting coincides with the disavowal of fragmentary approach—at the system level

The Science and Life Research Center tries to be at the crossroads of this experimental reflection on Society which is slowly taking shape throughout the world at the crossroads of research on the consequences of scientific and technological development and on the grave question of Society's long term orientation

Its structure reflects this intention the group of research workers constituting the Center undertake simultaneously to work out an opinion on Society's evolution and to create around it through meetings or permanent Institutions such as the laboratory for comparative forecasting a current of thought capable of modifying through a more objective awareness of social reality and of the gravity of certain decisions the responsible persons means of action

The Science and Life Research Center will publish an account of its activities in booklet form at the end of 1970 and monthly a newsletter in 1971

## SUMMARY OF SECTION MEETINGS

### Summary—Section 1

#### THE ROLE OF FUTURES AND FUTURE RESEARCH

April 10 13 30–15 30

Moderator HAHN BEEN LEE

DR ROBERT JUNGK speaking under the topic *The Role of Imagination in Future Research* emphasized the need for radical and creative imagination—a new state of mind beyond contradictions—in future research He criticized the prevailing extrapolation method pointing out the danger of exaggeration of the past and present trends inherent in that method He also touched on that short coming of the Delphi method which has the tendency of imputing into the future the common sense values held at present by the experts assembled in a Delphi scheme

DR JOHN MCHALE (Topic Problems in Social and Cultural Forecasting) pointing out the over emphasis on hard and instrumental sciences in the researches emphasized the need for greater infusion of softer disciplines and arts in future researches In this context he questioned the validity or adequacy of the presently used data as well as the basic premises upon which they are based His plea was for social indicators which give better justice to the quality of life

Discussions on these two lectures centered around the role the youth in creative imagination of the dividing line between critical imagination and creative imagination also the problem of methodology of developing more qualitative indicators

The relevance of future research to developing countries was questioned from the floor but this question was not followed up in detail

Finally there was a suggestion from Dr Jungk that one of the main functions of future research in the immediate future might be the rejuvenation of future thinking itself

April 11 13 30–15 30

Moderator S SCHWARZ

Two papers were presented at the session

- 1) PROF HENRY DAVID The Role of Assumptions about Human Behaviour and of Historical Constructs in Future Research
- 2) DR SELWYN ENZER Delphi and Cross Impact Techniques Effective Combination for Systematic Futures Studies

Professor David stated that two elements are unavoidably present in the work done by futures researchers that have a profound influence. These are the historical constructs that they make or adopt of the state of the present or the meaning they assign to the recent past and the nature of the assumptions that they make about human behaviour both individual and group. Because of this those who undertake inquiries into or about the future regardless of the methodology employed are cautioned to be aware of their limitations in the light of the intellectual equipment implied by the nature of the tasks they set for themselves. Ideally futures researchers should be polymaths with respect to the knowledge structures of a wide variety of disciplines but this they cannot be. Consequently they must be acutely self-conscious about the things they take for granted—about what they assume to be true about human behaviour and about human history that is the constructions made that seek to render man's past experience intelligible to himself. Futures research may be defined as the intellectual form in which a society renders account to itself of its probable and possible futures.

The historical constructs and the assumptions made about man and society have a direct bearing upon (1) the researcher's selection and perception of the problems he sets for himself (2) upon the parameters he establishes to render them soluble (3) upon his heuristic operations and (4) upon the notions of causality upon which he consciously or unconsciously relies.

Dr Enzer reported on a pilot project designed to combine the Delphi and Cross Impact Techniques in a cyclic feedback process. The approaches described in this program are still highly experimental and far from their final form. Nevertheless their contribution can be important particularly since many techniques currently being used to plan and make decisions in complex situations seem unsystematic and appear to admit actions that may be inefficient or work at cross purposes.

Indeed there is still much to be accomplished before future analysis can be regarded not as a science but even a respectable art. The key problems of organizing and understanding the issues and assessing the desirability of alternative outcomes which are crucial to such an analysis have been discussed only incidentally here and hence a complete analysis has been impossible. The task of this paper has simply been to suggest several ways in which the Delphi technique and cross impact analysis provide an appreciation of the interplay of individual problems and of opportunities that can be foreseen. Moreover these methods do so in a highly comfortable manner in the sense that they do not change basic thought processes or logic but rather use these processes systematically amplifying their implications in a retracable manner. Because an opportunity is provided to trace ideas back to their origins these techniques can be especially valuable in gaining the broad acceptance of proposed actions that is often essential where decisions will affect large segments of society.

April 13 13 30

Moderator ROBERT JUNGK

The session was devoted to a critical stocktaking of future research its spread

its scope and its role within the framework of scientific development.

PROFESSOR JOHN McHALE reported first on his typological survey of Futures Research which will be partly completed (phase one Futures Research in the United States) by June 1970. Specific interest was focussed on *typological analysis* of those major activities by organizations or individuals which were identified as futures research long range forecasting etc as distinguished from standard business government and socio economic projections.

The second phase of the study will be conducted in collaboration with a number of the major futures research centers in Western and Eastern Europe Asia and Latin America. In reply to one of the many questions directed to him Prof McHale mentioned that the questionnaire not only has a reporting function but also a creative one generating action on the part of those to whom the questions are being put.

MR SCHWARZ then presented a digested version of his *Notes on Information and the Expistemology in Futuristics* a paper which in the opinion of a number of participants seems to have a seminal importance because it went beyond futuristics (as Mr Schwarz calls Futures Research) and discussed the deeper questions of the philosophy the meaning and the structure of science in the light of the new and necessary effort to look beyond the present into the future. The paper suggested that the unfolding structure of futuristics would be most efficiently sustained if it could be institutionalized in the form of an international committee.

this committee should

- a) review the coherence of ideas and issue recommendations for standardization of concepts and principles
- b) suggest investigations in areas lacking consensus
- c) initiate research in areas that appear to be underrepresented
- d) sponsor and coordinate experiments and working systems for international information exchange and information services

A proposal was submitted for an international computerized bibliography in the new field. The suggestion was greeted by the participants in the session and will be presented in more detail to all future researchers in the hope to come to a working agreement.

R Jungk

April 14 13 30-15 30

Moderator HAHN BEEN LEE (in the absence of Prof Umesao)

DR D LIVINGSTON (The Study of Science Fiction as a Forecasting Methodology) stated by pointing out our critical bias of most science fictions science fictions tend to project the status quo into the future a good illustration being the fact that most fictions use ethnocentric names and customs (Moderator's note of Delphi Method).

The speaker then singled out two futuristically interesting functions of science fiction (a) generator of social force (b) predictor of change. Regarding the former function, science fiction acts as promoter of (i) self fulfilling prophecy,

(ii) self negating prophesy In connection with the self fulfilling aspect Livingston suggested that it would be a good idea to design comparative researches to ascertain what are the distinguishing characteristics of more fulfilling fictions on the one hand and the less fulfilling fictions on the other Livingston also had an interesting point regarding the self negating type of science fiction as they could become tension relieving elements in the growth of children so that they could better absorb the shocks of rapidly changing society Regarding the second general function of change prediction Livingston pointed out that the study of science fiction can tell the values held by the society and therefore a comparative study of science fiction in a cross cultural manner could yield valuable insights into the different value premises of various societies regarding the future

Discussion following the above presentation became a sort of multilateral cross check of various types of science fiction in different countries

DR A PENNINGTON (Futurism Pro and Con) highlighted the status of futurist as professional He presented an interesting four fold typology of futurists (1) historical futurist (past & analysis) (2) teleological futurist (past & control) (3) journalistic futurist (present & analysis) (4) autocratic futurist (present & control)

The speaker pointed out that the last type is the only style which offers the futurist the hope of having global operational significance in the world and yet its elitist flavor makes it rather unattractive to most futurists Thus the futurists do not have operationally real power except the power of ideas Pennington however suggested one way out of this dilemma he advocated their participation in creation of experimental futuristic societies such as Arocossanti new city in New Mexico and Auroville in India

Session 5 April 15 13 30-15 30

Moderator A J PENNINGTON

I Use of the Future for Development Policy by DR HAHN BEEN LEE

Dr Lee developed a classification scheme for future scenarios based on the *orientation* of decision makers toward (1) the past (2) the present and (3) the future and on their *attitude* whether (1) negative (2) ambiguous or (3) positive The combinations of these result in three general types of futures i.e. the explosive the pre-emptive and the ordered He gave several historical examples of each type Dr Lee then discussed the need for policy instruments required to change institutions and in turn to change values He cited five such instruments (1) multi year plans (2) future institutions (3) economic growth projects (4) private sector development and (5) social reforms and gave examples of each He then concluded that developing countries require a synergistic blend at these policy instruments and that for these countries futurology is really developmentology

During the discussion period Dr Lee stated that the concept of Third World Polarization is obsolete, and advocated multiple paths for development On the possible contributions by scientists from the developed countries he said that a

prime need is for help in creating a pool of trained manpower

I Critical and Establishment Futurology by BART VAN STEENBERGEN

Dr Van Steenberg defined establishment futurology as the dominant school using extrapolation as the basic methodology and having strong ties with the positivist tradition He stated that these futurologists are linked both ideologically and financially with the existing social order and that their very methods are based on a *Herrschaftswissenschaft* or dominance science He also stated that planners and futurologists contribute to a planned capitalism and in this way serve a destructive authoritarian repressive and inhumane society

Dr Van Steenberg contrasted the establishment futurologist with the critical futurologist who he said thinks that science in general and futurology in particular should play a catalyst role in the whole process of participatory or direct democratization the breakdown of authority and centralized power Continuing he said that they also reject a neutral value free or objective futurology and that their basic solidarity is with the suppressed people and not with the establishment

Dr Van Steenberg emphasized the importance of dialectical thought in considering future changes and recognition of the nature of man as a transcending being

During the discussion period Dr Van Steenberg expressed the need for change at the grass roots level of the educational establishment and society in general Asked whether or not his view of the world was simplistic he agreed that reality was more complex but that this further points up the need to define ideological positions in science very carefully In response to another question he stated that science contains a definite world view which it expresses in the problems it chooses to work on and the methods it applies to these problems

## SUMMARY FOR SECTION 1

Stephan Schwarz

Fourteen contributions have been submitted within the general theme of the section of which ten were presented by the authors (I have in this survey included reference to the papers submitted by Drs Galtung and Lienemann The paper by Dr Umesao was unfortunately not available) Whereas nobody would deny that the future is where we are going to spend the rest of our life the discussion naturally centered around the problems What is future research how should it be developed and what is its role in the shaping of our future As a lasting impression it might be stated that a number of central ideas recurred frequently expressing a relative agreement This does not mean that controversy was lacking but the feeling remains that this can in most cases be traced back to the difficulty in communication as a result of a lack of a common exact and omniscient framework of concepts and terminology Residual disagreement appears to be related to interpretations in terms of different political philosophies thus outside the realm of scientific resolution

The basic problem of delimiting the field of futures studies is solved solomonicly by Dr Galtung in defining all humanity as future scientists and similar



thoughts are expressed by Drs Lienemann Steenbergen and Pennington In this way the question of the role of futures research in the decision process becomes uninteresting In my own paper I have suggested that the non scientific and in particular the political component is particularly significant in any reasonable concept of futures research and that the recognition of this fact is essential for advances in meta futuristics The role of the non participants is the normal democratic function in the political process where information obtained from futures research is added to all other relevant information available

The scientific part of the research process has been analyzed in most contributions but an interesting feature is that what is said is not particularly characteristic of futures studies but rather for the scientific method in general I refer to notions such as imagination creativity the combination of induction and intuition the danger of being trapped in existing concepts models and theories the problem of objectivity in science as it enters through implicit assumptions and through the mere selection of projects etc

The role of imagination was stressed in particular by Drs Jungk Livingston and Galtung who made a distinction between predictive and prescriptive research which should be combined since a completely hard science approach is anyway logically excluded This is also related to the combination of study with action which was emphasized by virtually all the speakers which again shows that a value free futuristics is not compatible with the prevalent concept of the activity

Examples were given of experimental social and urban formations which could serve as catalysts for rethinking on a higher level

Dr Lee talked about the difference in approach between passive and positive futuristics where only the latter could yield progress on a nation wide scale The developing countries are particularly sensitive to the successful implementation of powerful programs for development over the entire range of society which gives a specially deep significance to broadly conceived futures studies

The role of imagination and creativity also enters the sphere of finding new concepts models and theories for the description of particularly social and cultural phenomena Dr McHale pointed at the traditional dominance of scientific to technologic futuristics related to the societal linkage (e.g. support) of projects and to other factors in the present community of futuristics A progress report was delivered on a typological survey for the US effort Further it was noted that in current economic theory the impact of technology on social phenomena has no reverse counterpart In reality there is a complex cross impact and feedback process continuously in operation which sets the scene for realistic futures research programs

The necessity of work without any disciplinary limitations is implicit also in the presentations of Drs David Enzer Pennington and Galtung This generalism creates considerable problems in respect to consistency and generality of means of communications and of methodology

A quite general problem is that of a clear analysis of assumptions and premises Interpretations or explanations in terms of theories and models are biased by assumptions and values Dr David specifically pointed out the importance of a strict self consciousness of the importance of historical constructs and of assumptions of human behaviour

The data collected for empirical study are intrinsically model or concept dependent Further the language itself abounds with value saturated words that must be uniquely defined As examples Dr McHale mentioned the word crisis which is related to change and freedom which has an active and a passive aspect Drs McHale and Enzer suggested that change instead of referring to a transitional state between two stable ones rather should be the normal the movement being under control based on understanding and judgement here the value discussion again enters

The concepts of control and choice are related to the important principle of multiplicity of projections as indicated by the word futures Dr McHale stressed the importance of widening the process of objectives of social and cultural forecasting in order to expand the range of choices and options Dr Galtung introduced the notion of colonizing time in the sense that today's decisions bind up the future degrees of freedom In the discussions of Dr Lienemann (partly referring to Dr Jungk) and Drs Steenbergen and Galtung it is an essential point in democratizing the process of decision making that future generations are not deprived of a reasonable autonomy in the age that is theirs

A more concrete view is demonstrated in Dr Enzer's approach to combine the Cross Impact matrix method with the Delphi technique Generally he observes the parallel structure of the processes of futuristics and systems analysis Define the issue try to understand the dynamics and functions identify relevant variables and data process and interpret possibly in terms of a model indicate possible modes of action The method described is a powerful tool introducing a dynamic dimension to the earlier analysis and it may also make possible a sort of laboratory experiment in social and political science as well as a widening of the scope of technological forecasting

Finally the data bank problem was briefly discussed (I believe we are coming down to the earth) and the possibilities of getting to an agreement on a system for an international bibliography for futuristics were discussed<sup>18</sup>

Summing up section (1) gives a reasonably coherent view of what futuristics wants to be and therefore a basis for continued work and cooperation in an atmosphere of understanding and goodwill

## Summary—Section 2

## RESEARCH METHODOLOGY

April 10 15 45–17 45

Moderator Kenichi Kohyama

The main theme of section 2 was methodological problems of future research of futuristics. After a decade of development in this new field, theoretical and technical attention has been focussed on the methodological foundations of future research among them are such important items as methods of forecasting, planning or decision making, problems of social indicators, objectives, criteria or normative approaches, characters of inexperience, science interdisciplinary study, problems of pluralism, piecemeal social technology, systems approach and others.

Reflecting the strong interest of future researchers in these problems, more than 80 participants attended to this section. Following two papers are submitted to the first session of section 2.

- (1) Johnston Denis—Forecasting Methods in the Social Sciences
- (2) Ezioni Amitai—Toward a Cybernetic Theory of Societal Change

The first paper by Dr. Johnston analysed a variety of methods of forecasting in social sciences and submitted following four groupings of methods: quantitative, exploratory, quantitative, normative, qualitative, exploratory, qualitative, normative. After discussing and evaluating the present states of forecasting techniques, Dr. Johnston stressed the importance of social indicators.

In the second paper, Dr. Ezioni emphasized the needs of careful reexamination of methods in future research and proposed an idea of a cybernetic theory of societal change.

April 11 15 45–17 45

Moderator D. F. Johnston

- (1) DR. TOSIO KITAGAWA—A Contribution to the Methodology of Futurology

Despite the conventional view that history and science are distinct fields utilizing different procedures and pursuing different objectives, Dr. K. finds substantial similarities between the work of historians and that of systems analysts. Using the work of Arnold Toynbee as an example, Dr. K. traced the central concepts in Toynbee's study in order to demonstrate their correspondence with the emerging concepts of systems analysis. In particular, Toynbee's 21 civilizations are analogous to the central concept of fields; the challenge-response sequence is matched by that of INPUT-OUTPUT; the goal of self-determination is

analogous to that of cybernetic control over a system, etc.

Dr. K. argues that econometric analysis, as presently constituted, is an inadequate basis for future-oriented systems analysis because of its inability to incorporate non-quantitative factors such as creative and flexible response mechanisms and processes aimed at the creation of new systems.

- (2) DR. ZAHARI STAIKOV—Interaction and Subordination among Physical, Biological and Social Time, Space, Mass and Energy: Some Basic Methodological Problems in Future Research

Futurological research demands the development of a single set of general principles and concepts universally valid for natural, biological and social sciences alike. Only through such integration will it be possible to analyze the complex of emerging trends and possibilities with a proper grasp of the inter-relatedness and inter-dependence.

Such an integrated system should permit free translation from one field to another (via conceptual bridges) as well as from one level of analysis to another (via conceptual ladders).

The development of such an integrated system of analysis requires the development of *social* concepts analogous to those of Time, Space, Mass and Energy and being mutually translatable as are their physical equivalents. Theoretical integration and mathematization of all sciences on the basis of a common set of fundamental concepts will alone permit the development of models adequate for both experimentation and prognosis.

April 13 15 45–17 45

Moderator D. F. Johnston

- (1) DR. KENICHI KOHYAMA—Systems Analysis for Policy Planning

1. The basic questions to be answered in the remaining years of this century lie in the field of social technology, i.e. what new value systems need to be established and how the necessary social innovations implied by these new values can be achieved.

2. Systems analysis offers the only means for answering these questions for the following reasons:

(1) The accelerating pace of piecemeal change since W. W. II has given rise to future shock, which can only be prevented by means of an early warning system meshed with a systems engineering approach which would recognize and cope with the interrelated impacts of these changes as they emerge.

(2) The information explosion can only be handled via computerized channels of Communication utilizing systems analysis to communicate timely and appropriate information where needed.

(3) Systems analysis offers hope for a more pragmatic approach to solving emerging problems in a pluralistic society by means of incremental changes and feedback mechanisms. Conventional approaches utilizing a given theory and deducing a solution therefrom no longer suffice.

- (2) DR. FELIX KAUFMAN—Forecasting, Analysis and Decision Making
1. The five basic forecasting methods are *deductive* (in terms of laws of logic

or growth) *inductive* (by analogy or via trend determination or correlation) *intuitive* (via various brainstorming techniques or expert counsel) *Normative* (linked to analysis of needs or to specified goals or targets) and *Creative* (the imaginative construction of alternative futures scenarios or models of possible future states)

2 The most valuable ingredient in any forecast and its most essential part is the accompanying analysis. Six components are relevant here: *Analytical tools* (internal consistency external compatibility systems analysis etc.) *Forecast utility* (especially timing) *Confidence* (both in terms of probability of occurrence and psychological terms) *Precision* (inversely correlated with confidence) the *Heisenberg effect* (the fact that forecasting or self denying) and *Limitation* (chiefly the fact that a forecast may be based on an incorrect assessment of the present)

3 Forecasting is not decision making. effective decisions require an assessment of pertinent forecasts and can only utilize these forecasts if they are made with sufficient lead time to permit analysis of the forecasting assumptions and procedures

April 14 15 45-17 45

Moderator Kenichi Kohyama

(1) DR JAMES ALLEN DATOR A Framework for Political Futuristics

This paper specifically is concerned with political structures and technological change. Outlining the sorts of interrelationships between level of technology size of population and types of several social institutions Dr Dator traced societal characteristics at five stages of development—I first man II pre civilization III Civilization IV Feudal pre industrial and V industrial. Then three futures were discussed that were (1) the unplanned future of the present (2) return to the Garden of Eden and (3) the future which was suggested by the speaker.

Pointing out the existing great gap between the political structure of contemporary American Society and technological changes the paper concludes that the American Society is greatly hampered by a political structure designed for and perhaps appropriate for a pre industrial society and that an activity intended to bring its political institutions into more appropriate relationship with its current and probable future technological capabilities is of urgent necessity.

To respond to this urgent necessity Dr Dator proposes an outline of an approach to social systems design as a conclusion of analysis on the usual alternatives to futuristics and on various modes of prediction.

(2) DR VELICHKO DOBRIANOV On Some Theoretical and Ideological Problems of Social Forecasting Prognostication and Planning

The problems concerning the general and specific features of social forecasting prognostication and planning and treating the ideological importance of these activities rank among the most important problems of Futurology. From this standpoint, Dr Dobrianov discussed on the following points

\*scientific forecasting and prognostication

\*prognostication and planning

\*sociology and social prognostication and planning

\*forecasting prognostication planning and some ideological problems

(3) DR STUART UMPLEBY Citizen Sampling Simulations A Method for Involving the Public in Social Planning

This paper is concerned with the growth of a particular function of government—the *explicit* formulation of policy principles—and how this can be accomplished by democratic means. The article further observes that a new technological device—the teaching computer—could eventually become a new medium for mass communication system seem to be ideally suited for discussions between experts and the public on issues of medium and long range planning.

April 15 15 45-17 45

Moderator D F Johnston

(1) DR HENRI BIANCHI For a Prospective Conflictology

Have 5 main points to recognize in our contemporary situation

1 Demographic growth and urbanization have transformed man's milieu from one of stability to one of constant change.

2 Conflictology must recognize as its basic frame of reference a dialectic interchange between Human expectations and needs and the natural environment wherein the social milieu is the arena for resolving the continuous conflict between them.

3 Relativity is a fundamental principle to be recognized both the observed and the observer are constantly changing and society is itself shifting from an emphasis on structure to process. However the changes occurring are *not* random but always reflect the tension between needs and the environmental constraints.

4 Crises must be recognized as reflecting inequalities between various systems of society in the acquisition of knowledge to match needs with environmental possibilities.

5 *Study of crises* must focus on dominant processes first and their underlying logic before the relevant factors can be quantified.

(2) DR LANDERGREEN Forecasting as an Aid to Planning A few Concepts

1 Must differentiate on pragmatic grounds between (A) *the planning object* (B) *its influentia environment* and (C) *the un influentia environment* recognizing that both (B) and (C) may be favorable antagonistic or neutral with respect to (A).

2 In seeking to forecast in the area of (C) must limit concern to only likely or probable developments or outcomes since they cannot be altered by definition. But in forecasting in the area of (B) need to supplement forecasts of the *probable* with forecasts of the *possible* (however improbable) and of the *desirable* (i.e. goal forecasts).

## SUMMARY REPORT FOR SECTION 2

Denis Johnston

I do not have a prepared statement so the section on Research Methodology consisted of twelve papers of which eleven were presented the twelfth was unfortunately unavailable

I think that the few observations that one can make on an Ad Hoc basis the first is that the borrowing perhaps from Ezion's remark the amount of attention devoted to methodology is sometimes in inverse ratio to the concrete work that is being accomplished We have learned this in sociology much to our despair where we spend a lot of time talking about how to do something and very often fail to do anything The representation in this section suggests I think both a pessimistic but possibly in the longer run an optimistic outlook for research methods And that is the tremendous diversity of the people concerned with methodology insofar as their formal background is concerned We had a mathematician we had a couple of people whose current work defies classification people interested in communications technology people concerned with the logistic of material supply consultants management consultants as well as indeed the conventional sociologists We even had one demographer myself

The main insight I think I have gained from reading these papers and listening to the presentations has been the notion that methodology is subject really to two fundamental constraints The first constraint upon us is always one that stems from the nature of the real world as we perceive it at a given stage in our knowledge This is sometimes called the data constraint But perhaps that's a misleading term Data are constructed out of our efforts to understand the world I think that I'm not misreading many of these papers in saying that we find in futurological research a need to redefine data or re-establish new data in terms of emerging criteria of relevance Criteria which have not been recognized in the past We cannot rest content—in other words with bodies of data however elaborate which have been established on the basis of pre-existing criteria of relevance or indeed pre-existing administrative requirements We in the social sciences are specially conscious of this problem We are dealing always with data that were collected for administrative purposes and not really for research purposes

The second constraint upon the efforts of the Methodologist is the constraint of purpose It's not enough to do what you can do because it's there and can easily be done In my country we are often accused of counting things that are easy to count and then playing around with the numbers that we've gotten The attention to purposes suggests perhaps one important lesson at least that I carry away and that is as long as futurological research has a multiplicity of purposes including some that are quite frankly idealogical in nature we must be open to a diversity of methods And it is far too early in the development of this field to say that this method or that method really offers the greatest promise In that sense I regret that—I regret to say this but I believe that our hosts have not really learned a great deal that they can immediately apply in the real world They have certainly taught at least as much as they have learned

I think that is as much as I have to say about research methodology

## Summary—Special Session

## PERSPECTIVES ON MULTI-CHANNEL SOCIETY

YUJIRO HAYASHI

Let me make a report on the Special Session held in the afternoon of the 13th This Special Session dealt with the problems which have been explored by the inter disciplinary group sponsored by the Japan Techno economic Society The members of this special group are Mr Kishida Mr Yamada Mr Kato Mr Makino Mr Matsushita Mr Karatsu Mr Atsumi Mr Kurokawa and myself Hayashi There are nine of us like a baseball team and we have organized ourselves in this special group three years ago to continue future research Of course we have not finished our research or rather we have just started our work but I thought it was a chance for us to make a tentative interim report

The general theme of our research is the multi channel society This deals with the question of the values in the future society In particular along with the technological innovation we felt that the society will have variety of global values in co existence and we already have signs of such society even at the present time In such a future society the social functions should be more flexible Many of the social disturbances or frustrations and tensions that we see today at present come due to the lack of flexibility of social functions In order to make social functions more flexible we should not only deal with the theory of the problem but also challenge the question of realistic design of future society With this purpose in mind we took up the question of what social needs are and how social needs are related with technology So far we felt that technology itself has a self contradiction of making the social functions rigid and if so what kind of new technological innovation should be aimed at in order to avoid such built in and self contradiction of technology One of the new technology that we aim for we felt it was important to develop a technology which will enable the group decision making We have many cases the difficulty the lack of agreement leading up to social tensions and we felt that it is technology that can best be applied to bringing about a consensus or agreement On this particular point many questions were raised in the session but we are seeking for the type of new technology that will enable to arrive at the general social agreement At the same time we felt that such a technology for group decision making could well be applied to international relations as well In the constantly changing society such technology should also be a technology for creation but we felt it also necessary to develop a technology of destruction In other words in order to create things we have to have the ability to abolish and destroy things past One of our members actually applied such a concept in city planning or in the design of houses as in the case of pavilions in the Expo 70 One sample of house construction is given in Expo 70 where the technology of creation and destruction is combined Same could also be said of education We also paid attention to the biological organism One of our members is a biologist or specialist in medical

science and much could be learned from the mechanism of bio organism that could be applied to social organism. A society must of course function 24 hours a day but at the same time we shall be having lesser hours of work in future. In order to bring harmony and adjustment between work and leisure we have to materialize what we call 24 hour society. In order to do this we have to make a drastic change in the management of society. In other words we have day time and we have to incorporate the function of night time into day time and day time function into night time or bring the city functions into rural areas and rural functions into city areas. I think it is necessary to have these interchanges between the functions and all these do not have to function constantly but they must function when such functions are needed.

There has been a general image that we have multi channel society. It will be necessary to have what might be called a very effective redundancy. Some of the strange terminology though it is—but I think it is asserted by one of our members that we have to distinguish between effective redundancy and ineffective redundancy and under certain circumstances effective redundancy is indeed effective or efficient. And it is also asserted by him that we have to also distinguish between efficiency and effectiveness.

Lastly in order to design such systems of multi channel society we will be facing many different problems. One of such problems is as follows. There are many problems which are not easily subject to quantification such as the needs of man. How can we quantify such factors which are not readily quantifiable and how we can arrive at social indicators or indices and how we can resort to these social indices or indicators in order to develop and design new social functions? And how we can have simulation of this social function that we see in the future and ultimately how we can incorporate the purpose of life into the social functions in the future?

These are the kinds of questions or problems that we are trying to explore in our group. Though these are very difficult questions and there is much left to be done this is the kind of problems that we have been seriously concerned with and since we are continuing our program of research we do not know where the next international conference is to be held but we will pledge to you that we will report what we will be doing in the course of years. Thank you.

### Summary—Section 3

#### TECHNOLOGICAL INNOVATIONS AND SOCIAL CHANGE

*April 10 13 30–15 30*

**Moderator YEHEZKEL DROR**

MR IYENGER made the first speech under the title of Technology of the future and its impact on society. His conclusion was

- (i) it will make available abundant power abundant power means abundant raw materials and abundant goods
- (ii) it will usher in an age of cybernation automation which will free mankind from the urgency of production and
- (iii) the biological revolution would bestow God like powers to man

Objections were made by Mr Dror the chairman and Mr Fukuzaki stating that it is important to distinguish between possible probable and certain futures and that technological predictions tend to ignore social and political issues. Thus sense I regret that—I regret to say this but I believe that our hosts have not really nuclear war while crazy is possible. The future poses problems which should be recognized as such.

MR MASUDA made the second speech concerning Social impact of computerization—An application of the pattern model for industrial society followed by free discussions that were made by Mr Dror Mr Fukuzaki and Mr Kon in which the relation between politics and computerization was raised. Special attention in the discussion was paid to the issues of industrial goals and social purposes in a computerized society.

*April 11 13 30–15 30*

**Moderator LUCIEN A GERARDIN**

The first paper by MR G DELIN deals with how to introduce change in Complex Systems. The author proposes to utilize an adequate frame of reference to tie together the three main levels of complex systems

- level of ideas
  - level of structures
  - level of environment
- with three kinds of processes

If the actual results are not in agreement with the wanted results it is necessary to check what kind of things are not adequate. For example very often structures are well designed and optimized but creative ideas are lacking.

To the following question any organization is built around people how to manage the change in order to avoid people's resistance to change the speaker answers that it is necessary to organize the change in such a manner that people are associated and not forced by constraints

The second paper by MR L G REMSTRAND deals with The Delphi Technique as a tool in Steering Complex Systems One of the main problems in a Delphi experiment is to find genuine experts And perhaps it would be useful to ask artists and poets to join scientific people Answering a question from the floor the speaker states that the main role for artists and poets was for the preparation of questionnaire and not exactly the answering of this questionnaire

In any case it's very difficult to define in a very precise manner the requirements for an expert in a given field

The third lecture by MR L GERARDIN deals with Future studies within a corporation Up to now many industrial studies relating to future have been conducted within a very short time as horizon five years for example More and more it's necessary to probe at a more distant horizon ten to twenty years with an adequate far away attitude The lecturer gives a general model as a reference frame for this kind of research Finally he points out the necessity for change in corporation organization with a formal recognized structure for future studies

The last paper by MR M KRAUCH deals with On the measurement of preferences for research and development planning Examinations of R and D of advanced countries show that the money is spent mostly for war technology nuclear and spaces studies A survey of public preferences shows a quite different point of view and a strong preference for social technologies health education transportation It's not a question of education level or of conveyance level as the survey has shown The lecture has tried to emphasize the reasons for this strange discrepancy between what is done by government and what is wanted by citizens He has explained the process now in operation in Germany with the use of mass media

April 14 13 30-15 30

Moderator JOHN R PLATT

#### Speakers

- 1 DR PLATT JOHN—How Men can shape their Future
- 2 DR LAMSON ROBERT W—Framework of Categories for Science Policy Analysis and Technology Assessment
- 3 DR BLOCK ESKIL—Actors Ultimate Goals and Social Indicators

#### I Dr Platts presentation

In order to approach the future future time should be classified into the following three times

*Correlation time (Ti)* the range of time being influenced by the inertia of the present society (2-10 years)

*Time of choice (Tc)* the range of time in which goal directed steering is important being prediction rather than forecasting in such that the multifunction of the society by cybernated (10-20 years) that is the period from 1990 to 2000

*Time of uncertainty (Tu)* when war comes Tu is close on the other hand long range planning corresponds to such that Tu is far off Then he discussed things to be considered for decision making particularly in connection with time of choice

Further diversity will become more popular in social function than uniformity consequently the problem relating to the conflict between majority and minority Then he put emphasis on formulating creative tension

He also pointed out the importance of meta agreements that is

- 1 Non Zero Sum
- 2 Diversity
- 3 More Imperative

#### II Dr Lamson's presentation

He pointed out that the fundamental problem and need which we face today is to use wisely the understanding and power which our science and technology create Then Perception Evaluation and Control of the effects of using this power are required mostly So far Evaluation and Control are not sufficient but we should not give the individuals and groups which create science and technology the responsibility for this Further he pointed out that we should distinguish between and make separate judgements concerning

- 1 capability
- 2 probability
- 3 popularity
- 4 desirability

Here there is a question in connection with desirability being a concept based on values Then in terms of what and whose values does the analyst evaluate the effects of action and use of technology and why? Then he pointed out the risks of political and administrative action because of difficulty in maintaining his independent neutrality and detachment

Also he pointed out that the public should understand problems involving use of technology and participate in decision making For the man of future diversity and range of choice would enhance man's adaptability flexibility and freedom

#### III Dr Block's presentation

In writing a scenario the important thing is how large an extent the decision maker is able to influence the course of events he is for the moment interested in having investigated For planning type of future research it is very useful to build up a detailed dynamic model of how the decision is actually made, what information is needed for it and how it should be acquired

For game type future research it is important to identify the most influential partakers of the game called actors

For simple forecasting type of future research logical imagination creative imagination and imaginative imagination are important as professor Jungk would call

And he showed required factors in forecasting planning and Game from his practical experience of building up a social model for Swedish Departments of Education Defence and Housing

But he said as a matter of fact it is very difficult to measure various factors consequently that might decrease to a considerable extent the usefulness of the model

*April 15 13 30-15 30*

**Moderator** L GERARDIN

The first paper was given by MR KAZUMA TATEISHI MR MIKITAKA YAMAMOTO and MR ISAO KON with the following title SINIC THEORY—AN APPROACH TO THE FUTURE SINIC is an acronym for Seed Innovation and Need Impact Cycle It is a broad theory about interrelations between Man Society Science and Technology Taking into account the past history of humanity and putting the main factors of development into a mathematic form SINIC try to predict the broad lines of future in a normative way

According to this theory there are ten societal ages from the very primitive society up to a natural society Now advanced countries are proceeding from mechanization society to cybernation society with a gradual shift from the matter world to the mind world

The second lecturer DR OTA SULC spoke about a methodology of forecasting the interactions between technological and social changes The general model he proposed to use is similar in structure with the cross impact matrix of T J GORDON and H HAYWARD Technological and social forecasting are produced in a Delphi exercise by relevant experts These experts give also the relative cross impact of the forecast events which permits the final computation of probability of occurrence of these events taking into account these interrelations

The third lecturer DR YEHEZKEL DROR gave very illuminating statements relating to A policy view of future studies alternative futures and present action It is not very easy to have a good understanding between policy makers and futurologists (or forecasters) and to enhance the use of future studies by policy makers forecasters must take into account the 15 statements of Dr DROR

### **SUMMARY REPORT FOR SECTION THREE**

YEHEZKEL DROR

Section Three was nominally devoted to the subject of technical innovation and social change All together from my count thirteen papers were given in this section of which indeed three papers did deal with the subject of technical innovation and social change

The other ten papers were distributed as follows three papers methodology of future research six papers the uses of future research in decision making in organizational steering and in policy making and one paper dealing with overall survey of future studies

This distribution of papers was in no way a disadvantage It well illustrates in any case what my main feeling was at the sessions at which I was present The feeling from these papers was namely one of multiplicity divergency and

heterogeneity which provide a lot of stimulation and a lot of interesting ideas but there was no comprehensive view as contrasted with what was said by Section No One

I did not come out with a feeling of integration But this I feel is not a mistake nor an omission at this stage of futures studies Instead I regard this dispersity not only in goals but also in assumptions approaches and philosophic underpinnings as quite representative of the present state of futures studies and also of its inherent multi dimensional characteristics Well following the advice of the Chairman let me state my subjective overall feeling which is as follows There was a lot of stimulation which surely made this session a worthwhile one If the question is would they like an exact repeat performance well I think we should try to advance to more systematic approaches and not to repeat the same thing all over again

## Summary—Section 4

### EDUCATION FOR FUTURE

#### Summary for Section 4

HAROLD A. LINSTONE

The relation between education and the future can be viewed in many ways. Not surprisingly, the nine papers in this group were heterogeneous. There were views of the future of education and of education on the subject of futures. And there were also discussions of the aesthetic aspects of future life in general.

#### The Future of Education

The growing inadequacy of the existing educational systems was stressed by Drs. Landau and Elboim Dror (Israel), Mr. Sluizer (Netherlands) and Drs. Linstone and Smith (USA). Among the reasons we find

- (1) Emphasis on receipt, storage and reproduction of information but not on creativity
- (2) Static nature and organizational rigidity of educational administrations in a very dynamic environment
- (3) Emphasis on production of a multitude of conformists and suppression of individualists
- (4) Artificial distinctions between education and culture, between technical education, social education and the humanities
- (5) Definition of education as a phenomenon limited to a distinct (youthful) period of an individual's life and designed to prepare him for his vocation
- (6) Compartmentalization of subject matter
- (7) Emphasis on the past and absence or superficiality of future orientation. Dramatic changes in the educational systems, particularly in the advanced countries, were envisioned.

Dr. Landau described techniques used in Israel in special programs to elicit the creativity in children in the 8 to 14 age group.

Mr. Sluizer enunciated four principles which are guiding the educational planning project, Plan Europe 2000.

- (a) Continuity of education
- (b) Equality of opportunity
- (c) Positive rather than negative counseling of students
- (d) Student participation

Dr. Linstone felt the need for three basic concepts in developing a university for the post-industrial society.

- (a) Preparation of the unprepared society by several means: a planning

## Summary of Section Meetings

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- (b) orientation stress on communications and acceptance of rapid change
- (b) Lifelong learning (multiple careers, changing purposes of education)
- (c) Greater concentration on integrative research in the critical, unsolved socio-technological systems problems. Our lack of understanding of complex, ill-structured systems is placing a great burden on our intellectual resources.

Dr. Elboim Dror stressed the need to

- (a) Change the recruitment policy in educational administrations
- (b) Make planning an integral part of the education process as well as an integral part of the total long-range planning process
- (c) Keep educational planning highly flexible

Futures seminars, student participation in teaching and research as well as in administration and use of technological aids to free the staff for non-routine learning activities were also mentioned by the speakers.

A serious missing link in these discussions (a characteristic of the entire meeting) was evident: a concrete plan of steps to implement the changes proposed.

#### Education in Futurism

Dr. Eldredge reported on a survey of courses in futurism in the United States. He identified 80 courses and obtained more detailed information on 40 of these.

The results can be summarized as follows:

- (1) The intellectual roots are shallow; social change theory is not well understood by those teaching.
- (2) Most known predictive techniques are used.
- (3) Teaching methods are highly innovative, whether developed by the senior faculty or the young radicals; there is a large measure of student participation.
- (4) The courses shake up the students' minds and stretch their intellectual horizons.

Dr. Smith raised the question of the educative function of the futurist establishment: how well is it served by the products emanating from the think tanks and policy centers? Their proximity to the government and their technical, depersonalized systems analysis provide amoral, non-humanist evaluations of alternatives and thereby create serious biases.

#### Aesthetic and Humanistic Aspects

Mrs. Lejeune, Dr. Garaudy and Dr. Smith focussed on the subject of aesthetics and the future society. The subjective, unreality-focussing poet was cited as an essential ingredient if our future is not to be dehumanized. Dr. Garaudy discussed the need to give each child the opportunity to find in itself a Raphael or Mozart. All pointed to responsibility on the part of futurists to give an important place to aesthetics in the education in the decades ahead.

#### Fiscal Analysis

Dr. Hirsch presented the concept of fiscal outlook analysis as an information base for education planning and budgeting decisions. A fiscal outlook model is a



useful tool in elucidating the relation between expenditures and revenues in a changing economic environment. He illustrated his talk with the example of the Los Angeles school system.

In conclusion, I would underscore one point. There was clear recognition that drastic changes are essential in education at all levels.

I would also observe two omissions:

- (1) Solutions proposed in general terms were interesting but require much more detailing.
- (2) Insufficient attention on the practical difficulties of implementing change in the face of institutional rigidity.

But these omissions are not unreasonable in a meeting whose theme is challenges from the future. However, they suggest a theme for 1972: from challenge to creative action planning.

Dr. Harold A. Linstone

### Summary—Section 5

#### ENVIRONMENTAL CHANGES—TIME AND SPACE

*April 10 13 30–15 30*

Moderator R. L. MEIER

We took up the problem of leisure in the future using a paper by a psychiatrist, DR. WOLF, as a beginning to an international assessment. The paper suggested that to an international assessment, the paper suggested that an increasing capacity for social belonging was required, and that it was now possible to accumulate data about individuals (computerized, of course) in order to get the best fit.

In Japan, it appeared that greater emphasis was placed upon the learning process and the social usefulness of leisure, whereas in the Western countries, it has become more consumption oriented. The rise of the automobile among the youth of Japan has brought with it a number of roadside activities, including motels, so it may be joining the West without desiring to do so.

The following facts indicate the future trends:

In Athens, it was found that most leisure time was spent with friends and that the number of friends increased with time in the neighborhood as well as with increasing income. At incomes that people could afford automobiles, they added an extra close friend or two at a distance. In America, we found that the life styles are now becoming avocation or leisure oriented, even though the higher income people work harder, and that each life style in general required a part of the environment as well as an association of people with the same interests. Active leisure requires:

We don't know what education for leisure should be, except it should lead for variety and the freedom to choose from this variety. What is learned in the course of active play is often put to use in society at times of crises.

*April 11 13 30–15 30*

Moderator R. L. MEIER

This session dealt with the metaphysics and methods for designing complex environments in the future. Kiyonori Kikutake argued that, since a progressive artificialization of the environment seems inevitable, it should simultaneously be made humane. Design regulates life by creating spaces. Modules can be designed for special purposes (e.g., sleeping) but more interesting are the multi-purpose ones used inducing participation. Then one has to work out mathematical rules

for integration of the modules so that they fit together. With only 40 sub units he can produce an almost infinite variety of alternatives.

Yona Friedman of Paris offered an introduction to the integration process. In order to avoid the use of the average man tendency in the design process today he proposed a multiple feedback approach. First he would construct a repertory of all possible solutions and then add a device for warning users of the implications of their choices and once made another device to warn the world of the effects of their choice. The last in a series of choosers has the greatest choice of neighbors if he knows their locations and properties but the appropriate model is one that gives the first a new chance to choose.

Friedman proposed to build mechanical counters in the city to determine the potential of the population in information theoretic terms which would determine the likelihood of people using various modules. His method offers a physics for Kikutake's metaphysics.

Enichi Isomura delayed by arguments with students yesterday contributed the idea of urban center that operates around the clock where rotating shifts of workers and users could get multiple use from the infra structure. After being questioned he explained that different parts of the metropolis would have different degrees of round the clock activity as would have different metropolises be at peak activity at different hours as one goes around the world.

Richard Meier noted that only 3-5% of the population in large American cities tend to work and live out of phase. For airports, power plants, oil refineries and steel mills that work around the clock it has been found that the social just and most efficient solution is for the workers to take turns on the respective shifts. It costs only 10-15% more to get people who are willing to change their living patterns monthly. The savings in the use of the capital intensive equipment very much outweigh these costs.

April 14 13 30-15 30

Moderator J G PAPAIOANNOU

PROF A UEDA spoke on The Historical City Kyoto and proposed a two thousand year plan for it.

He noticed that Kyoto has a continuous history of 1300 years therefore we could visualize an equal period of the life into the future (long range planning) against which short range planning (5 to 20 years) looks extremely short.

He stressed his conception of a city not only as a receptacle for human affairs but an embodiment of art in the more general sense of the word. Japanese cities with wooden structure see them replaced frequently when compared with European structures (stone) which are more permanent and rigid.

We cannot preserve therefore the structures themselves (except in isolated cases). We should rather preserve their *image* (symbol preservation) at least for important structures that can be seen as landmarks through which we can visually reconstruct the past. Following the history of Kyoto from prehistory to present entitles us to project its future for a comparable period (say 1000 1300 2000 years ahead). What such long range planning should preserve is the important landmarks of Kyoto's history. Prof Ueda showed a plan where beyond the

landscape such landmarks are indicated for symbol preservation. Main axis important buildings from different periods, vistas towards mountains or other monuments (Sujaku street linking the Sujaku gate with the Rasho gate) etc. He also proposed to preserve the first Meiji period streetcar and showed the features to be preserved in relation to the emerging Tokaido (Tokyo Osaka) Megalopolis. New Archaeological findings may add to the points to be preserved. In many cases old monuments that are extinct can be usefully replaced for preservation by exact replicas. He added in answer to various questions.

DR R. L. MEIER spoke about *Resource conserving Urbanism*.

He noted that resources concentrated 80% in rich countries are becoming increasingly scarce especially in the poorer countries. We learn resources at an exceedingly high rate in focusses represented by Metropolises (concept city as a consumer of resources). For the future of our cities involving high densities (and large systems as the megalopolises) we shall have to cope with scarce resources particularly in Asia and parts of Africa.

Intellectuals claiming that we should keep people in villages are wrong. Only large cities offer a multiplicity of advantages and choices and they are likely to attract progressively more people.

Transfer of Western technologies to Asian cities failed so far. Japan by reaching middle classes of Asian cities (e.g. cars) accelerated the waste of their resources. But we know that large scale economies are possible e.g. we can reduce Worker consumption to 4% of that of Western cities.

Energy	6%	of	US	cities
Materials	10%			

by using special (rather revolutionary) techniques.

*For water cycles* of reuse i.e. sewage treatment then concentrate protein then feed algae then chickens pigs etc then give 1/2 kilo of such food for humans per family per day.

*Hydroponics* now achieves remarkable economies in water and greatly increased crops.

*For energy* we must find automobile substitutes so as to have the same choices of movement leisure etc. This can be mainly done with telecommunication technology for combining known types (e.g. bicycles cars planes etc) and new ones into an integrated efficient system.

*Capital equipment* like building should be efficiently used instead of only daytime use we could move toward around the clock (24 hour) use by using consecutive shifts leading to reallocation and lowering of peaks.

*The city scape* will have to change more quickly with the use of new materials like rigid polyurethane foam. A half life for buildings which in 20 years in Japan could become 10 years in Asian cities. Tearing down for replacement could be reduced from 2-3 years to 6 months. Cost is still rather high but likely to diminish quickly.

So the city's function is not to preserve images but to *develop human resources* by creating persons that can organize themselves and function in an information rich human environment.

Moreover Western prototypes are not directly transferable to Asia. Asia will have therefore to *invent itself* the systems and techniques that can satisfy the

previous requirements (e.g. abolish the flush toilet, the car, etc. and replace them by appropriate new techniques)

Thus handling poverty problems for Asian cities in the next 30-50 years will involve techniques like the industrial approach to agriculture (agro-industrial projects), new housing studies recognizing the coming of the megalopolis and developing appropriate techniques for coping with such situations.

Answering questions, Dr. Meier explained that the non-transferability of Western techniques to Asia is due mainly to water (in 4 cases Asian cities came close to evacuation of their population because of water shortage), traffic and the permanence of building (we shall have to replace even more quickly than now in Japan). Prospects of desalination in conjunction with nuclear energy initially promising are now gloomy because of very high cost.

Preservation of traditional values will not be a major future problem first because present cities (where things needing preservation are) are going to be a tiny fraction in area of future city systems and second because values attached to locale will be dying out.

An abrupt and difficult transition in life styles is afforded by that between village (max. size 10,000) and large city (say one million). Further size increases do not create insurmountable problems for human values in view of the fact that larger complexes (e.g. megalopolises) are networks of centers of say the order of 1M and not compact larger cities.

April 15 13:30-15:30

Moderator FUMIHIKO MAKI

DR. PAPAIOANNOU, the Director of Athens Center of Ekistics

1. For next hundred years it appears that remaining natural resources can comfortably support up to 50 billion people but spacewise only up to 20 billion.
2. In next thirty years the most critical problems we will face are the gap between developed countries and developing ones, racial tensions and environmental pollutions. If we can overcome those then the future would be much brighter.
3. According to a calculation of Mr. Papaioannou, the director of Athens Center of Ekistics, a possible urban pattern of year 2070 will be centered around presently developing ten or more megalopolises which will be effectively connected. He calls this Ecumenopolis and predicts that particularly three megalopolises—namely European Continent, the East and Central North America and Yangtsekiang area and Japan will become predominant among them.

DR. GASTAUT

1. His report is about the result of his study on a strategic projection of the national transportation policy in France between 1965-85.
2. He emphasized administrative practicality of its policy and particularly the importance of responsibilities of those who implement it. To achieve this he

used multicriteria analysis through which politician can make alternative decision.

3. He divided the process into three phases:
  - a) Structuring the central strategy
  - b) Then select strategies which are implementable through public sectors
  - c) He then divides this into inter-urban and intra-urban systems for its prediction estimation in 1965-85
  - d) Three critical phenomena have been identified as the result of the analysis:
    - i) How to handle population increase in large metropolises
    - ii) Development of public transportation system in small and medium sized cities
    - iii) Handling cargo movement

The following are some recommendations:

- (1) The development of domestic air lines for intercity transportation and turbo planes for long distant transportation.
- (2) High speed surface transportation systems is necessary to meet increasing demand for recreation activities for large cities. A new system must be developed for smaller cities.
- (3) Containerization is vital for effective cargo handling.

#### SUMMARY FOR SECTION 5

R. L. Meier

The future of man is bound up in the evolutionary synthesis of environments that make possible the most intense, advanced and novel interactions between men. Geographically these environments are called urban regions; politically they are designated as cities; and technically they are described as multi-channel communications networks. These high tension environments are presently under extraordinary stress almost everywhere in the world; the consequent breakup, reconstruction and often explosive expansion in many dimensions is causing discomfort and a multitude of highly vocal complaints. Although less than 1% of the land surface is immediately share of the growth of knowledge and the accumulation of human experience. We took up the crises that can be foreseen, the challenges for planned as well as need adaptive change that result and the specific problems that need to be resolved.

An immediate question is that of scale. Many complaints arise that cities are too big and so must be dispersed. J. Papaioannou shows that the reverse is true—many more people wish to participate in urban society and will attempt to immigrate from the village and town. The cities of Asia, Africa and South America in particular must expand several fold in this century and must continue to grow much larger before equilibrium is reached a century or so hence. The urban environments offer life styles that permit a much more rapid acceptance of small family ideals and thus speed up the approach to worldwide population stabilization and thus help forestall the possibility of new, very large scale famines. The cities also are able to obtain a sharp increase in productivity from work and are therefore also able to provide higher levels of welfare than otherwise available. The cities of the future are expected to continue to grow in a

hierarchical polycentric form—the Ecumenopolis. When they grow in a planned fashion this feature is likely to be accentuated so as to develop as much as possible a sense of community that defeats the alienation created by what would otherwise be a vast sea of anonymity.

The urbanism expanding into densely settled countryside in resource poor parts of the world must quickly diverge significantly from the Western patterns of urban settlement. Richard Meier demonstrated that it is possible to synthesize an eco system involving plants, animals, and microorganisms living together with man in an urban environment which conserves as much as 95% of the water, 94% of the energy, and 90% of the raw materials used per capita in the United States on the basis of technologies already known and tested at the pilot plant level. These savings would require the adaptation of systems that provide substitutes for the large scale use of automobiles, sewage treatment systems, electrical appliances, and other capital intensive equipment by using more information processing. The detailed application of these technologies to specific locales still requires tens of thousands of which would guarantee satisfactory performance for the cultures residing in the cities.

These directions for the growth of future urbanism yield opportunities for leisure as great in amount as in the affluent societies of our time, to engage in cultural activities. But would not the leisure be used differently also? Hajime Karatsu is quick to point out that the leisure of the future must be diverse and a part of it will be information based to a higher degree than before.

Enchi Isomura argues that the overcoming of congestion at peak periods and the east west links between cities will combine to force a round the clock feature upon the centers of metropolises and thus influence many patterns of leisure time use. Dr. William Wolf offered a psychodynamic model for the future which emphasized the development of social belongingness so that the individual could belong to many groups beside his own family.

Atsumi Ueda reminded us that humans value urban images of the past and present as the foundation of the cultures that is transmitted from one generation to the next and illustrated his arguments by describing a proposal to preserve the images of 2000 years of Kyoto. Fortunately it proves possible to superimpose five different eras of the past upon a very dynamic present in the older parts of Kyoto. Relatively little conflict exists between the *new* growth of the metropolis in Japan and elsewhere and the preservation of historic cultural landmarks. The principal question is whether people value them enough to pay the cost of preservation at the time the action needs to be taken.

Cities are designed to facilitate human communication. Their life support systems must function and they must be as safe as alternative places of residence. Mousier G. Gastaut reviewed the expected changes in France for providing face to face interaction by means of passenger transport, revealing that only long distance trips are likely to grow significantly during this century, a phenomenon connected with the growth of megalopolis and later ecumenopolis.

How does one proceed to design for a complex future so that the components of the urban environment will function in a satisfactory way? Kiyonori Kikutake argued that since the city is becoming progressively more artificial it can be made more humane by creating modules of environment for special purpose (e.g. sleeping) as well as multi purpose ones that induce participation. The

specifications of these modules can be integrated mathematically or by the use of meta systems in architecture and planning. Yona Friedman offered the outlines of a procedure which avoids using the average man concept in the design of the module. He would use countermeasuring urban transitions to generate information that would provide not only a better fit with the individuals but also reduce the amount of frustration generated by the interferences between transactions such as communities, purchases, trips, and conversations. Kisho Kurokawa introduced the kind of information that would be needed in Japan for this rationality, showing that the people who are only one or two generations removed from the village (which are by far the majority in rapidly growing metropolises) retain many ties with their old homes which generate many visits and also biases the use of urban services in unsuspected directions.

When a plan is constructed for reorganizing and expanding environments there are two choices for implementing the changes. Junnosuke Kishida described adjustments that must be made in the political and administrative spheres using the obsolescence of Japan's Public Telecommunications Law in the light of the forthcoming computer and space technology as an example that constrains urban development. An alternative is to enlarge the educational system with the aid of the new communication channels so as to teach people how to take advantage of the extra opportunities provided within the plan. At the university level an international system with many paths to technical competence needs to come into being, thus accelerating the growth of the cosmopolitan component of future urban culture.

By the twenty first century we expect that more than half of all living men will be living voluntarily in cities while the remainder will either be adapting to urban society at a distance or escaping from it because they have already had too much.

## Summary—Section 6

### NEW VALUES NEW MAN

*April 10 15 45–17 45*

**Moderator** BERNARD TOWERS

The session attracted an audience of 50 with about 30 observers in the gallery. MR GUERON'S paper stressed especially the fact that traditional morality concerns the individual and that there are very few real standards of morality at the level of organised groups. Three transformations are in process in the speaker's view: (1) The older mechanistic thinking is giving way to a thought system which fully accepts the complexities of reality; (2) a new value system based on group activity is developing; and (3) action is directed more towards human beings than towards material things.

In discussion it was suggested that the changes were evolutionary rather than revolutionary in nature, but the speaker replied that they were so far reaching as to constitute a real revolution in thinking. Dr Platt argued that many traditional value judgements will change; we will recognize that each individual is a unique person whose moral status is best assessed in terms of level of organisation rather than of good and evil. Mr Gueron said that diversity constitutes the best hope for humanity. Dr Lesse argued the need to develop through education a concern for interrelating the specialist encyclopedic knowledge which the computer could permanently provide. He commended the optimism of the paper.

PROFESSOR SAKAMOTO presented the results of a sociological survey of attitudes in modern Japan and concluded that two distinct types now existed: the old (Type O) and the new (Type N) with the latter gaining in numbers. He assessed the likely effects of the present polarization on Japanese society in the future. In discussion he suggested that similar trends are operating throughout the world irrespective of whether the social organisation is capitalist or socialist. He saw a big danger of an increasing gap between those who are capable of handling the new knowledge and techniques and those who are not. Dr Lesse suggested however that it would not be the technical experts who would become the future leaders, but rather those who had learned how to integrate knowledge. It was generally concluded that the future would give much more scope for the development of individual personality.

*April 11, 15 45–17 45*

**Moderator** FONT VIALE RIGO

*The Psychosocial Future of Man—Golden Age or Stereotype*

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This was delivered by DR STANLEY LESSE. This paper stressed that man has great ability to adapt himself to changes and what humanistic optimism should be is an essential question for futurology. The design of goals of society should be based on the nature of man: its capabilities and limitations. Science should be returned to the scientists and should not be in the hands of large institutions. Science without humanism becomes an instrument of technology; we must have values for value's sake but not for pragmatism. In the world today we cannot afford science for science's sake. We must have humanistic science.

Dr Atsugi suggested that we should create an international committee for exchange of medical research. Mr Yamamoto said that in the industrial society technological innovation had made light of human well-being, but we are now entering the post industrial society. Machines offer men more leisure time to be dedicated to creation.

Dr Lesse argued that change does not always lead to progress. To develop wisdom should be the goal of education. The medical doctor should be a generalist. Dr Dator said that the more knowledge people have the more humanistic they are. Dr Lesse argued that he is not certain that more education leads to more humanism.

DR KLAUS TUCHEL spoke under the title of Social Philosophy in the Future: Aims and Problems.

The science of future is concerned with philosophical problems. We want to know not only in what way rapid changes are possible and what causes them, but also what influence they exercise over our behaviour and thought. Lack of real standards of value is only to be recovered following a fundamental alteration in attitudes and ways of thinking. He asserted that the future philosophy of society must aim at the creation of comprehensive theories; it must be dialectical and it must reflect the relationship between perceiving and deciding. The most important aim of a future philosophy of society is to develop theories of society in which values are completely worked out to their foundations and to their possibility of realisation.

In the discussion Mr Yamamoto said that in the future we will have constant change and to have one value system for the whole world will be very difficult. We are entering towards a society in which each individual will have different values.

Dr Tichel said that we should construct plural value systems premising main value.

Dr Font said that final value systems should not be instrumental values.

*April 13 15 45–17 45*

**Moderator** STANLEY LESSE M D

### *Human Development in a Critical Future*

This was delivered by MR JAMES WELLESLEY-WESLEY and others who participated in the Mankind 2000 meeting of September 1967 in Oslo which was the forerunner of the meeting.

This paper stressed that the human factor was not receiving proper attention.

We must directly involve ourselves in a humanistic focus with regard to the future a human need orientation

Dr Eldredge cautioned against excessive empiricism suggested by some of the Mankind 2000 aims This was countered by Mr Gueron who stressed the need for accentuating human values

Dr McHale spoke against the continued fractionated study of man by specialists

Dr Lesse stressed that the new student of man should of necessity be a generalist one trained in the interrelationship between physical dynamics social dynamics and human dynamics

A discussion followed as to the need for a continued role for Mankind 2000 It was agreed that it was a unique organization being the only one focussing upon the relationship of the human factor on the one hand and social and technologic change on the other

Dr Fred Polak stated that a meeting dealing with Mankind 2000 was being held Wednesday morning and that the next meeting of this association was planned for 1971 in the Netherlands

*Images of Man and the Futures of Human Institution* by R WAKEFIELD

This was a report on the systems approach to futurologic research

This paper stimulated a discussion of man's natural state It was felt that as yet there was no clear cut understanding as to what man's natural state was

April 14 15 45-17 45

Moderator JIRO SAKAMOTO

#### *Evolutionary Trends and Human Potential*

This was delivered by DR BERNARD TOWERS He said that Mankind today is like a man newly in love awakening from dreams We must overcome several ways of thinking which were greatly strengthened in the nineteenth century by ideas such as the second law of thermodynamics extrapolated to the universe and aggressive theories of social evolution His paper stressed that we should study the process of cosmic evolution Then we may find the appropriate set of goals for our own phase of the process and may be able to prepare ourselves adequately for the tasks that lie before us

DR ALBERT SOMIT's paper warned that technological development causes new threats against humanity or human well being technological development enables us to handle genetic control or control of thinking If these controls could be realized there would be a great confusion and some authority must control these technologies But this kind of control is anti democratic

DR KURODA divided 20 century and 21 century into two types the representative science of the first was physics and it brought nuclear power and public nuisance But the coming 21 century will be years of medical control based upon biological science The problems which it will bring us are biological and chemical weapons and control of the mind Contrasting such deep problems with the essence of human development he put an emphasis on urgent revolution of the

whole value system rather than on the betterment of a partial system One of the directions towards the value revolution is not to conquer Nature but to keep the balance between Man and Nature And also we should consider Man a part of Nature not a ruler of Nature Dr Kuroda pointed out that Buddhism has many suggestions to offer in order to build such biological and sociological way of thinking But the speakers from the underdeveloped countries mentioned that in their countries they are not satisfied only with criticizing European thought of 19 and 20 centuries from the point of Asian thought They said if they have the technique they would pursue the physical development in spite of the public nuisance It was said that the Evolutionary trend which Dr Towers aims at is similar to the paper of Dr Kuroda

April 15 15 45-17 45

Moderator BERNARD TOWERS

Owing to the absence of Prof Sicinski only two of the three scheduled papers were delivered The two papers provided a fascinating contrast between the problems facing a highly developed industrial society such as America and those of the underdeveloped Third World

PROF STUTEVILLE spoke on *The Affluence and the Psychology of the Collector A Case history in the Evolution of Value Systems*

The enormous rise in America of the hobby of making specialised collections of objects which are often seemingly of no intrinsic value is the result of the emergence of the problem of leisure coupled with the traditional drive of American society towards hard work and a philosophy of saving as an ultimate goal for man The habit is especially prevalent in prepubertal and post retirement males and it has both positive and negative features The first group find in the practice a preparation for the hard work which will occupy them in their middle years the second a substitute for work which also satisfies their fantasy need to deny the fact of impending death In discussion it was agreed that similar behaviour patterns in the same age groups are prevalent in Japan To the suggestion however that it is drop outs who go in for this mode of self expression the speaker replied that many collectors in America are in fact highly successful men in other spheres of life

PROF FONT VIALE RIGO of Venezuela spoke on *Population Quality and the Future of Latin America Values and Development* He said that the concept of development had been too often equated and confused with economic growth and expansion whereas development really should not be exclusively oriented toward material well being but rather towards being more in a metaphysical sense He outlined ten major tasks of a development strategy and in answer to questions he said he thought that the Third World might now have an opportunity to make the jump from the pre industrial to the post industrial society In this respect he thought that Japan which has gone through the traditional values of a pre industrial society might provide a unique model for the present underdeveloped countries as to how to make the great leap forward towards being more rather than simply having more

## SUMMARY FOR SECTION 6

BERNARD TOWERS

We were talking in our Section 6 on *New Values New Man*. One of the major impressions I had was right up to the last day at least was a large attendance a large interest was shown in this section. The last day was rather thin but previously to that every day was between 40 and 50 people attending with a large number of observers in the gallery which I think indicates the significance of the subjects that we were debating.

A few impressions that came up the major impressions were first of all it was suggested that the old type of morality the old type of value systems was one based on morality for the individual whereas what is emerging now is a question of value systems for group orientated activities. That we must devise a new set of values which will operate within groups of all sizes.

Secondly it was emphasized that in the future knowledge as such will not be so important for the individual because we can leave knowledge to the computer to store it and provide us with permanent access. What will be important in the future is to develop the type of mentality that is capable of integrating this knowledge and this will require a new style of education and a new style of values. In other words the specialist is not going to be the man who will be highly valued in the future rather it will be the generalist who is capable of integrating specialist knowledge from a variety of sources.

Creativity as such is going to be important in the post industrial society individual personal creativity. And here we had an interesting paper yesterday on collecting in the United States there has been a tremendous growth in the collecting habit of all kinds of curious objects like old barbed wire and not any coins and stamps but things like chamber pots and all kinds of things are being collected by people with a tremendous drive and verve they are doing this. And Professor Stuteville interpreted this as being the result of two things.

1 The increase in leisure which is a big problem for the post industrial society.

2 The inherent American drive the Puritanical drive to work. It is very interesting that the collecting habit is most dominant in pre pubertal males and in post retirement males and hardly at all in females. And here it was suggested that the pre pubertal the school boy who goes in for the collecting habit is preparing himself for the task of life which is one of hard work and the post retirement male is using it as a substitute for work and also as a way of escaping from the thought of impending death because he hoards his materials here as in a sense something which is going to prolong his existence.

It was suggested that the collecting habit may well act as a bridge then between the industrial society and the post industrial society. Now the response among the developed countries was of course different. There were two attitudes that came out from the underdeveloped countries here. The first said we must first of all go through the materialist collecting phase collecting of material objects before we can ever come to think in terms of a leisure society but there was another attitude which came out from Professor Font particularly yesterday which suggested that the present underdeveloped countries might well be capable

now of making the leap from the pre industrial directly to a post industrial society without having to go through all the stages of aggression and so on which was characteristic of an industrial society. And here it was suggested that Japan which has gone through or is going through the industrial phase very rapidly might well provide a model for the future.

We had a very interesting session on the dangers inherent in pharmacological therapies in mind control and all other aspects of biological research which is anti human and it was suggested very strongly eventually after discussion that science and scientists must in the future accept restrictions on the type of work they will be permitted to do. Now if this is regarded as being anti democratic one can reply to this by saying that after all it will be society in general democracy in general which will decide for the scientist into which areas he ought to put his skills.

We had a session on the place of man in the evolutionary process. Looking at the evolutionary process in total cosmic terms and trying to develop some idea of man's responsibility his personal responsibility now for increasing and enhancing and furthering the process of evolution. And here with a paper from Dr. Kuroda who is a Japanese biologist who has recently become interested in Buddhism it came clear that in some of the teachings of Buddha there are many elements which do fit very closely into our modern recent attitudes towards concern for the environment concern for the biosphere and again man's responsibility for the things around him.

Now all this to me lead up to the feeling that Mankind 2000 which three years ago was concerned to stress the value of man in futuristic research has got something very positive to offer to us in the future and one hopes that the conference which is hopefully going to take place next year will be a big elaboration of this particular Section 6 of this conference.

## Summary—Section 7

### SOCIAL SYSTEMS AND SOCIAL INNOVATION

April 10 13 30–15 30

Moderator HANS RIEGER

Three members of the European group MR SELAN MR MENKE GLUCKERT and MR SØRENSEN presented papers

V Selan presented some observations on social and political innovations and focussed attention on the gaps existing between technical and social innovations. Menke Gluckert underlined this with a plea for conscious planning requiring continuous critical review in order to close the gap between science and politics. He stressed the necessity of providing alternative opportunities for the citizens self expression called for more user oriented and friendly information systems (e.g. in education libraries) and by sketching the example of an issue bank (as opposed to an information bank) presenting the arguments for and against a policy issue showed the way in which improvements in the sphere of social innovation may lie.

Sørensen presented the dilemma of the individual in his double role as object of study and as an individual decision maker. Whereas previously those possessing knowledge had been able to influence social development today listeners are bored because they know everything already. People have needs and wishes and are articulate about them. Thus the development of society has become independent of the priesthood gathered here. Even if we can devise and publicise the medicine for society's ills society is independent of it.

In the discussion which centered around the problem of the individual's participation in the process of social change and development Sørensen stressed that it is not the problem of ordinary people's participation but of ours as those who study and think about the future. We may well become people *outside* history because history will be moved without us.

April 11 13 30–15 30

Moderator VALERIO SELAN

The reporters were two and were dealing with closely interconnected problems.

In fact MR KLAGES faced the problem of social indicators as an instrument of measurement of social developments. According to the speaker this measurement encounters considerable difficulties because of the large numbers of

## Summary of Section Meetings

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parameters involved (from 200 to 600). But furthermore a difficulty arises from the fact that any measurement system must be founded on a set of values.

During the discussion it was pointed out that these values might be official values (expressed by government declarations trade union pressures etc.) interpreted values of the masses or ideal values.

Linking directly with this problem MR DROR pointed out that future researchers do not seem sufficiently interested in the problems of modification of political mechanism. He thinks that this is the real core of the problem of implementation of future oriented projects.

Mr Dror's expansion aroused a debate from which emerged the need to call the politicians to participate in future research work and vice versa.

April 13 13 30–15 30

Moderator H P WIDMAIER

MR TAKAHASHI structured his paper on Company Loyalty of Employees in a World of Plural Values into seven points. First he talked about the Galbraithian Dilemma then about the patriarchal type of organization followed by a paragraph on mobility. The next point deals with the problem of the plurality of loyalties followed by a proposal to actualize the loyalty to the business organization to the fullest extent. The paper concluded with postulating an integrated system of management by objectives.

The paper and its proposals were heavily criticized by various participants of the discussion under the aspect of manipulation and alienation of the worker. Labourers as adjuncts of industry said one of the participants.

DR RIEGER spoke about Innovations in Bureaucratic Systems. He first gave the most relevant characteristics of bureaucracy followed by a critique of the existing bureaucratic apparatus and its working. Looking at the Kahn Wiener Trends it was said that at least half of them influence the rise or the number or the necessity for bureaucratic systems. Inefficiency was thought to increase. The author postulated bureaucracies as information processing systems using a technocratic type of approach. There was a discussion of the approach. One of the opponents labelled the approach Bureaucratization of Bureaucracy.

April 14 13 30–15 30

Moderator VALERIO SELAN

MR RUGGLES presented a paper on future planning in corporate planning. Although pointing out that rational analysis is explicitly separated from value judgements he underlined that in the last two decades the corporations have become aware in US of the problem of long term planning for the establishment of long range goals. At the same time they become confronted with long term forces and implications such as pollution transportation systems and urban development. Speculations about the future are vacuous unless they lead to implemental policies but the corporations by carrying out long range and total



researches can also contribute to a general extension of knowledge about the future. The speaker proposed also the creation of a Futures Information Clearing House to serve as a core for expanding knowledge.

During the discussion the problem arose of the social and political responsibility of corporations at the domestic and international levels. The necessity of internal and supernational legislation has also emerged.

April 15 13 30-15 30

Moderator HANS RIEGER

Two papers concerning the problems of social control of the future were presented. D LIVINGSTON examined the institutional arrangements required by society to assess the benefits and risks to society emanating from alternative courses of development of technological innovations. After sketching the models for such assessment presently under discussion at the national level in the USA he considered the projection of these ideas into the international arena. He proposed an International Technological Assessment Board (INTAB) which would be autonomous but financed by the UN and UNESCO. It would contract out specific technical assessment studies, provide liaison among the national agencies, issue annual reports and mediate international disputes in the technological field (such as river projects).

WIDMAIER examined the present mechanisms for social decision making and the criteria implied by them. The rationality of the economic man dominates the rationality of human man in all spheres of social activity—in the price system, the voting system, the bargaining system between organised groups and the hierarchy of the bureaucratic system. All these systems exploit the unorganised individuals. Widmaier was unhappy to find that there are hardly any criteria developed for social investment decisions. However, the gradual increase in the stock of more aware individuals currently being produced by some of the universities permitted some cautious optimism for the future.

The discussion centred on the problem of feasibility of what the speakers were individually advocating, although there was consensus on the great and increasing importance to be attached to the task of devising steering mechanisms for society in the future. While bureaucratic systems had many failings, there was a necessity for them and Mr E Dowdy suggested international comparative studies of their efficiency. A forceful plea was made to examine critically the institutional arrangements for assessing not only advances in the technological field but also in other fields like that of genetics.

## SUMMARY FOR SECTION 7

HANS RIEGER

Section Seven dealt with social systems and social innovation or in a previous reading of the title of this section, special systems and social innovation and I would like to classify the work of this section into three sections:

- 1) Society as a system, total society

- 2) The sub systems of society and innovation within them and
- 3) Some methodological problems which rose in our discussion

First Society as a System. We discussed the future problems of the present developments in society. We discussed the gap between science and politics in a paper by Menke Gluckert and some colleagues. And the problem of the social consequences of technical progress. A suggestion was made that apart from data banks we should also have issue banks which collect and classify arguments for and against certain issues relevant to the future of society.

We had a paper by Widmaier on the anonymity of the individual and his exploitation by the inter action systems presently existing and operating within society. The price system, the bargaining system, the bureaucratic system and so on. From this rose the problem of the individual participation in influencing and selecting the directions of change. And in another paper by our present Chairman Sørensen we had the thought that even if responsible thinking progresses and can reach valid conclusions, the question arises whether the steering mechanisms are available for directing the change of society in the directions we find desirable. First there is the lack of implementation machinery which draw in the discussion of the alternative domestic policy futures, point 2 and he suggested that in a future conference we should also include to a greater extent politicians who are actually engaged in this work. Also social processes have such a momentum of their own that those with knowledge and perhaps also the futurists no longer have the persuasive powers that the men of the book had previously. This brings about the Sørensen dilemma. A question of participation of the individual in the steering process is perhaps less important than the futurists that is our participation. We as futurists may well become people *outside* history because history will be moved without us.

Turning now to the sub systems, two papers examined the future of corporations and one by Mr Takahashi examined the changing loyalties of corporate employees in Japan. A second paper dealt with the need for more future planning and the question of social responsibility in corporations. Another sub section of these sub systems dealt with bureaucratic systems. A very regular participant in Section Seven, Mr Douady from Australia who himself unfortunately did not present the paper, stressed that we need bureaucratic systems or some similar instruments for bringing about change. And the question arises whether we can invent more modern and efficient bureaucratic systems for the tasks of tomorrow. The trouble is that rituals and procedures and redundant organizations like perhaps this business of summing up section reports at the end of a seminar do not die easily.

And in another sub system, if one can very loosely call it so, we dealt with the question of the need for having some controlling machinery, both nationally and internationally, for the assessment of technological advances and for the steering of such technological advances and another concrete suggestion emerged which I think is worth mentioning—an International Technological Assessment Board was suggested by Mr Livingston with the nice initials which he has already coined for it, INTAB.

And finally turning to the methodological problems we had a paper on the problem of measuring social innovations by Mr Klages who suggested 2 to 600 indicators for observing change in social systems in the total social system. And

the problem of evaluation rose in this. It is possible to evaluate different states of the social system if 600 indicators are needed to show these different states and his answer to this was the evaluation would already be included in the scales of the dimensions which would be projected onto one scale of desirability.

The second problem therefore was one of evaluation and from this rose the problem of whose evaluation and therefore the problem of participation of groups and individuals in the decision making process of society.

The problem of implementation of those decisions was also discussed and the political administrative social organizational and educational consequences and implications of such implementation machinery were discussed fairly thoroughly.

Mr. Chairman, you asked me to state in very short form what my most pregnant realization was in this section. I would say it was quite sudden and caused by something outside but perhaps connected with this conference, the rather alarming news we had from outer space of what was happening there made me think of a parallel. We are in the process of putting our children on something like a spaceship which is going into the unknown, only partly loaded and the question for us which I think is extremely acute is whether we have adequate steering mechanisms which we can provide for a future for the children of today to enable them to decide where to go and possibly also to enable them to go into different directions.

## Summary—Section 8

### WORLD FUTURES

*April 10 15 45–17 45*

M. TADOKORO Space Exploration and Astronomy

After man's successful landing on the moon by the Apollo projects, the expenses for space exploration are being cut down. However, taking into account its contribution to various fields, especially to the fundamental sciences of geophysics and astronomy, space exploration should be continued on the same scale as until now.

(Discussion)

Nothing in particular

NORMAN ALCOCK National Power: A Basis for United Nations Voting and Aid

United Nations voting and aid should be determined by the national power. He introduces a new concept—GNP equivalent—to define the national power. He chooses four main indices such as Health, Education, Communication, Population Increase. It is his proposition that it can also reflect United Nations voting power. He suggested that the system of the weighted voting is more appropriate for the Security Council and will replace the veto. However, since not all nations will have a vote under the weighted voting plan, it is doubly important that the General Assembly remain as it is, a body where the micro nations still have a voice and a vote. A second aspect of the voting system is a proposal of coupling it with international aid given through the United Nations. Each nation is taxed a fixed percentage of its GNP which is given to the United Nations and each nation receives from the United Nations a guaranteed income which is directly proportioned to the size of its population.

(Discussion)

How to realize it came into question

*April 11 15 45–17 45*

PROF. MUSHKAT From the Law of Nations through Peace Research and Planning to Futurology

Prof. Mushkat traced out transformations in the concept of war throughout history. He dealt at some length with the international legal steps taken to outlaw wars and prevent their recurrence. He felt that just as laying down laws do not automatically prevent crimes in society, similarly mere legal measures will not also automatically prevent wars. He felt that peace organizations at the university levels in various countries could study the problems of peace in an

objective manner and play a more effective role in ensuring peace

DR JOHAN GALTUNG Pluralism and the Future of Human Society

Galtung presented a scheme based on two variables to classify social relations discuss development theory and map out possible future development The scheme looked as follows

	Collectivist	Individualist
VERTICAL	Model I conservative	Model II liberal
HORIZONTAL	Model III revolutionary	Model IV post revolutionary

Post revolutionary society was defined as a society that would permit a maximum of diversity in self realization and a maximum of legality in social organization The discussion focussed on various possible paths leading into Model IV society Galtung felt that it might be easier to get into Model IV from a middle range GNP level than from a rich but vertically frozen society along the Model I Model II continuum

April 13 15 45-17 45

PROFESSOR MENDES in his paper Evolution or Revolution A Valid Dilemma? gave an extremely penetrating analysis of the Latin American situation today with visions of the future He referred to the military coups in the region to the leftist anti US coups as well as to the coups to the right and outlined how political dynamism in Latin America now tended to be carried by the military sector leading to strong power centers He saw great necessities for counter railing forces against the strong world center represented by the USA and national centers represented by the neo capitalist sector but felt this was unlikely to be brought about by revolutionary processes He also emphasized how intellectuals had been cut off from world circulation of ideas through open or implicit censorship in several of the countries

The debate centered around the role of the intellectuals and whether Latin America would do better without any dependence on the US and the political attitude of the young military cadets Mendes responded that the intellectuals were not free that Latin America was no longer in a position to make such a decision and that as the military got more power the military academies became increasingly empty

PROFESSOR LANDHEER in a very stimulating paper on The Industrial System as the Basis of World Society had as his main theory that the industrial system has to become a social system not merely a system engaging in maximizing profits He said that the system faced three basic questions the ecological change the external relationships for instance between nations and the internal relations above all in terms of participation of labor He suggested a *World*

*Industrial Court* to make the industrial system more social He also felt that industry must not be permitted to impose artificial needs on people and said that people had to express their own genuinely felt needs In response to a question he developed further the possibility of globalizing the industrial system for instance by taxing the *multinational* corporations and making them into *world corporations* serving mankind

### SUMMARY FOR SECTION 8

JOHAN GALTUNG

Section Eight was discussing international futures—futures of the world system Twelve papers were presented and the attendance was highly oscillating from an extreme of around 80 and down towards 10 but we averaged around 30 I think it is safe to say that the future of the international system as a part of future research or future studies has not yet found its form That may be good but it may also be bad because the international system and the world system in general is going to determine so much of what we can do at any level of our existence

Three basic problems were discussed in the papers The problem of power the problem of economic development and the problem of putting technology to the use of the world system As to the problem of power Professor Alcock from Canada presented a new scheme for conceiving of United Nations a weighted voting scheme which also could be used as a scheme for distributing according to a system of progressive world taxation resources from the rich towards the poor in the world That kind of thinking seems highly germane whether one is willing to buy Professor Alcock's scheme or not but like the other approaches it is difficult to see how the world system can be more responsive to the individual around the world To the 3 3 or 3 5 billion human beings rather than to the 135 or so national territories

In terms of economic development Professor Mendes from Brazil and Professor Landheer from India made passionate pleas for development strategies that will make for self reliance and autonomy in developing countries to some extent based on specialization to some extent on competition and in all regards on less dependence on the developed part of the world This theme was also developed by Galtung who was concerned with various models of future development of the territorial as well as the non territorial system

Professor Longted from the Netherlands discussed multi lateral corporations and industrial system in general and made a plea for the world court of industrial development taming and domesticating the industrial system into a social system serving man's real need rather than imposing on him artificial needs in order to maximize profit and other short term goals It was discussed in various meetings the possibility of turning multi lateral corporations by some called multi nokos by others called BINGO for Business International Non Governmental Organization into world institutions by imposing on them world taxes and by making them responsive to democratic control at the world level and where they function

It was mentioned repeatedly that any international enterprise owes its existence

to the international system and it is at that level that it should flow back much of what it is able to earn in order to strengthen a system that is devoted to peace both in the sense of absence of direct violence and in the sense of structural violence in the sense of legality. This theme was also developed further by several speakers but I shall not go into detail except to mention that Professor Mushkat made a passionate plea for inter disciplinary international efforts to try to come to grips with all aspects of the problem of peace.

In the technological approach to the world system which was an approach explored by four of our Japanese participants these spin off effects from space exploration were mentioned how germane it had been to fundamental sciences geophysics and astronomy and it was also mentioned by several the importance of highly imaginative innovative approaches to the oceanic circulation by Professor Higuchi and a conceptual model of technological development for converting elements in land and ocean as well as energy into useful materials by Professor Furuta. However when I mentioned that the topic has not yet found its form I think it is because we have not come to grips with the problem of world participation. We have an international system of nations we have an extremely rapidly expanding system of non territorial actors of EGOS, INGOS and BINGOES but this system is abstract. It consists of entities that are not human beings and at sometime take a form and a life—a nation sometimes exists for its own sake not for the individuals in it and the same seems to be increasingly true for inter governmental and non governmental organizations. We have not been able to break through these crystal spheres and make the individual assert himself at the world level. And it is to be hoped that in future conferences we shall have more papers on how modern technology can make man meet man at the global level and together participate in shaping a future. What this conference brought to our mind I think is not only the impending acute danger of arms races but equally the way in which illegality is not an accident that we can do away with easily but basically fundamentally built into the structure of the world as it functions today built into it as an element that almost is by definition a part of it. And these factors are significant because whatever dreams and however much imagination we may put into our domestic futures and our formal social life the maladjustment the mis organization the biases the crimes the exploitation at the international level can still destroy it all.

## SUMMARY—MORNING SESSIONS

*April 11 10 00–11 30*

**Moderator** E F WINTER

- Participants
- 1 Athens Center of Ekistics (Greece) J Papaioannou
  - 2 Center Berlin for Future Research F Lienemann (W Germany)
  - 3 Drexel Institute of Technological Research A J Pennington (USA)
  - 4 Futures G F Streatfield (England)
  - 5 Futuribles Internationales P Menke Gluckert (France)
  - 6 Futurological Society of Czechoslovakia O Sulc (CSSR)

1—Ekistics is the science embracing all aspects of city settlement and of the development of mankind's habitat. The Center was established in 1963 and has five divisions: research (large scale basic research into the basic problems of the city of the future), education of about 20 graduate students, international programs (world wide contacts and collaboration, international meetings, the Athens Ekistics month in July, secretarial services to the world society of ekistics), documentation and publication (journal EKISTICS, Newsletter, research reports and documentation reports).

2—The ZBZ in Berlin was founded 1961 to provide information, help decision makers and foresee possible developments in society. Its projects are all government supported. It has only a small staff and prefers to work with consultants from all over Germany on interdisciplinary teams. It issues a monthly magazine. Its major projects concern now simulation, urban development, old age and R & D.

3—Drexel is a center at Drexel University in the USA. Its main interest lies in interaction between thought and action on environment questions. Its work is supported and financed by NASA, the American space agency. Three projects are particularly important: urban simulation games, seminar on technology and society, design project course in which students learn the feasibility study of a modern city system including architectural, technical, financial, social, political, economic and environmental problems, all seen as one system. Their main emphasis has been on building an urban simulation model game called BUILD. It is computer based. Their plans include collaboration with the Japanese on a study of efforts in the US and Japan to radicalize the working class in an affluent society. They also want to help establish a

system of an international Delphi with computers. They also plan to reconstruct and restructure their educational experience of students through participation.

- 4-Futures is a magazine which grew out of a special issue of Science Journal to which the response was so overwhelming that it was decided to form a special magazine. The editorial policy is concerned with throwing light on the methodological questions of long term perspectives. The journal provides in addition also other services such as reviews, news on institutions, special science fiction reviews. It cooperates closely with the US based Institute of the Future of which Olaf Helmer is a co-founder as well as with David McHale. Futures requests articles and informations.
- 5-Futuribles Internationales has been the center of futurist studies in the Francophone world for the past ten years. It is now opening in Paris the Maison Futuribles Internationales, a large building on rue de Saints Peres. It extends its invitation to any future research groups to come and utilize the documentation, library facilities, meeting rooms and offices. Its scientific approach is a realistic and systematic investigation of alternative futures. It publishes *Analyse et Prevision*, a monthly, a book on the language of forecasting. It carries through special international conferences and plans such an international conference for 1972 on social policies. Towards this end it is sponsoring policy research and the development of methods to measure social progress.
- 6-Futurological Society of Czechoslovakia took its origin from the student movement on March 21, 1968. Since then it has become an integral part of the Socialist Academy, aiming in particular at popularizing futurology. Its primary activity is, however, research. The research program includes programs of various institutes, universities and ministries wherever there is a concern in long range planning. It has also founded in September 1969 an interdisciplinary team on futurology which has organized a number of nationwide seminars (future research in relation to cybernetics, architecture, sociology and psychology, future research on long term trends and counter trends in various fields of human activity). The second activity concerns documentation and publication. A bi-monthly *TREND* is issued. Continuous radio programs on the future and a TV encyclopedia on the future have been started successfully. The third activity concerns special training courses for students and managers. The business faculty has recently introduced a course *Introduction to Futurology* with the help of the Society. University students are collecting materials for a *Simulation Model of a University* supported by the interdisciplinary team.

After these presentations a lively discussion ensued. Questions were raised as to the technicalities of the computer network allowing for a national or even international Delphi. Great interest was shown in that. The second most important question raised was the one of democratization and participation. Panelists attempted to show that future studies are not elitist and in fact could hardly become so when the young show interest and participate in them. The questions of application of findings of future studies in the real world were only partly

answered. It appears easiest to apply them in economics. It is not sure yet how to apply them in politics, except that the decision making process is facilitated and politics becomes a more rational activity. Simulation seems the key technique in this connection. Finally, unsatisfactory and open remained the answer to the question of value of future studies to the developing countries.

Doubtless these questions will again be raised on the mornings of Monday through Thursday when further future research institutes and organizations concerned with the future will present their views and report on their work. Participants to the Conference found this introduction to the work of sister organizations very valuable.

*April 13 10 00-11 30*

**Moderator P. MENKE GLUCKERT**

In the morning session 13th April the following future research institutes and future research organizations presented reports on structure and activities:

- German journal *FUTURUM* (Jutta Matzner, managing editor)
- German Society of Future Research (Bruno Fritsch)
- Harry S. Truman Center for the Advancement of Peace (Yehezkel Dror)
- Institute for the Future (Selwyn Enzer)
- International Peace Research Institute (Johan Galtung)
- Korea Institute of Science and Technology (Hyung S. Choi)
- Japan Society of Futurology (Yujiro Hayashi)

The German journal *FUTURUM* was originated by Professor Flechthien, Berlin. In contribution to the journal he tried to avoid the annoying tendency of convergence theories. The journal proved that on the contrary there is a new variety in the politico-economic basis of capitalist societies.

The German Society of Future Research was established in 1967, the Swiss Association for Future Research in March 1970, an Austrian Association is in preparation. These organizations of the German speaking countries were the result of a strong new interest arising from the First World Future Research Congress in Oslo. All associations have the same goals, namely:

- provide framework of cooperation
- guidelines for policy making
- stimulate research

The main areas of research of the German groups are:

- 1 Data storage and retrieval
- 2 Peace research
- 3 Economic growth and technology
- 4 Administration and organizations
- 5 Labor and automation
- 7 Habitation and environment
- 8 Leisure
- 9 Society and social innovation

The following institutes are in operation or will be in operation in the near future:

- a Institute for analysis of Future Technological Development in Hannover

- b Max Planck Institute for Research of the Environmental Factors in influencing the scientific World of to day in Munich
- c Center for Future Research in Berlin
- d Swiss Institute for Development Research (in preparation) Swiss Institute for Peace Research (in preparation)
- e Berlin Institute for Peace Research within the Berlin Science Center

The Harry S Truman Center for the Advancement of Peace was established at the Hebrew University of Jerusalem about three years ago. It is devoted to advance peace. Main areas for research include

- Nature and cause of conflict
  - Peaceful fulfilment of the needs and aspirations of developing countries
  - Normative standards for peaceful change
  - Techniques for abatement of tension and conflict
  - Relevance to peace of mankind's ethical and religious experience
- Other future research activities in Israel include
- 1 Establishment of an Israeli Society for Future Research in 1970 (President Yehezkel Dror)
  - 2 A conference of Future Studies and Israeli Problems held at Tel Aviv University in March 1970
  - 3 Preparation of an Israeli Institute for Policy Analysis to study alternative futures

The Institute for the Future USA is a non profit research organization that has been in existence for almost two years. It is specifically dedicated to research of the long range future. It is not engaged in any military contract work but will however study containment of military conflicts. The Institute for the Future is an operationally oriented interdisciplinary system which recognized that many alternative futures are possible and that the choice from among these is available to us through timely decisions and actions which our society controls. The Institute attempts to derive substantive insights from subsequent studies later on combined to define the overall bigger picture. The Institute is attempting to provide leadership in creating a more thoroughgoing futures orientation in organization of all kinds in our society and to supply through this leadership some of the trained specialists pioneering knowledge and advanced tools and services required for improved planning and policy development by public and private agencies.

The Korea Institute of Science and Technology was founded in 1966 based on a joint initiative by the US President Johnson and the South Korean state president. It is mainly concerned with studies in the fields of technology and applied engineering working in cooperation with more than 100 research institutes. A technical economic survey supposed to cover all sectors of the economy was finished for 16 fields out of 25. One of the studies is related to demand supply prospects of an integrated iron and steel mill.

The Japan Society of Futurology sponsoring the IFRC is still a very young society which started work on July 6 1968. It is unique because it is the only nation wide association in Japan for research into all phases of the future both distant and near with a view to exploring on

the basis of the scientific findings of all established learnings every kind of possibility which the future may offer us. In transition from an old to a new has undergone stages of overlap in which old and new elements co exist and inter mingle with each other. Japan is a multiplex society. New things are digested within old Japanese customs. This inevitably creates constant friction and confusion. The normality thus attained has elements of restlessness that pave the way for another change. The pace of change in Japanese society therefore may be either slow or fast depending on what is illuminated. Most likely the Japanese future will retain much of the past which means it will be very wide and multi phased.

This was clearly proved in the international conference on The world in 2000 held under the auspices of the Japan Economic Research Center (1967) the conference organized by the Union of Japanese Scientists and Engineers as joint symposium 1968 held by the Japan Techno Economic Society. Futurology is built on a synthesis of various sciences. It is necessary to cross borders not only between different disciplines but also between nations and races. Academic achievements and creative thinking unfettered by conventional concepts must be combined. Cooperation among different disciplines must be effectively achieved—always within a wide range of international contacts. This is exactly what the Japan Society tried to achieve with the International Future Research Congress.

The International Peace Research Institute at Oslo (PRIO) was founded in 1959 and started work in the future in 1966 and works along the following 5 lines

- 1 *World Futures* There are studies of the future of the world as a social system with territorial and non territorial actors partly predictive and partly prescriptive. We are most interested in the latter since we believe the present world structure to be basically wrong. We publish two journals in this connection

- a *Journal of Peace Research* (founded in 1964) which will increasingly devote itself to future oriented analytical studies of the world system

- b *Bulletin of Peace Proposals* (founded in 1970) which will give excerpts from official and non official peace proposals and analyses of them

- 2 *Image of the World in the Year 2000* We participate in a 12 nation study interviewing representative population samples from 15 40 years of age about their images of the future. Data have now been collected and analysis is under way and will be reported at the 7th World Congress of the International Sociological Association. This study is undertaken under the auspices of the European Social Science Center in Vienna

- 3 *Utopia Research* In cooperation with the University of Essex we make a study of 2 500 years of utopian tradition to learn from that tradition ideas about social structures not (yet) found empirically. Data are still in the process of being collected

- 4 *Domestic Futures* In connection with the preceding point same work is being done on future society with special emphasis on pluralism. In these studies PRIO tries to look beyond the post industrial and revolutionary societies

- 5 *What we do not*

- issue any documentation on future research or try to coordinate anybody ourselves
- disregard the terribly significant content of the youth revolt
- regarding PRIO as a political beyond politics it thinks future as present is about power, but it feels that power should be better understood

*April 14 10 00–11 30*

**Moderator** ARNE SØRENSEN

- Participants
- 1 The Korea Society for Future Studies
  - 2 O E C D (Paris)
  - 3 National Institute of Mental Health (U S A )
  - 4 The Rand Corporation (U S A )
  - 5 Polish Academy of Sciences (Poland)
  - 6 Royal Swedish Academy of Engineering Sciences
  - 7 S A I N T (Salzburg Assembly Austria)
  - 8 IREA Futuribili (Italy)

1 Presented by Dr Hahn Been Lee Seoul The Korea Society for Future Studies was founded in 1967 33 members drawn from the Humanities the Social and Natural Sciences as well as from government business and the press — a modest but serious attempt to prevent a surprise attack from the future Future Research in a country such as Korea must be seen as part of the general development thinking which has evolved more and more strongly in the 25 years since the liberation There is strong emphasis on social changes and value orientation is added

2 Presented by Dr Peter Menke Gluckert Head of Science Resources O E C D This large World Organization does not formally go into Future Research as such but its numerous analyses and evaluations do necessarily concern themselves with the future 10 year projections of the potential trend growth of output employment and productivity of the member countries are given In the same way 10 year planning for education were introduced in 1961 In 1963 a Development Center was established for mutual information between the member countries and the development countries O E C D has published the standard catalogue of Future Research methods Technological Forecasting in Perspective by Eric Jantsch

3 Presented by Dr J Platt This Institute is applying General Systems Theories by which successful comparisons are made between biological and cultural systems The Non Zero Sum situation exemplified in the famous Prisoners Dilemma could very well be used in solutions of world conflicts

4 Presented by Dr Y Dror Originally set up for military and security problems the Rand Corporation now applies its work more and more to social problems Founded 22 years ago Rand now employs about 600 scientists Many of the scientific methods used in Future Research all over the world were originally developed by Rand such as for instance the Delphi Method

5 Presented by A Scimski In Poland Future Research is carried on by many groups and Institutions The work is coordinated by various centers among which the Committee for Research and Prognoses Poland 2000 set up by the Polish Academy of Sciences Here is worked out a projection of the Polish society in the years 1985–2000 In the Committee various disciplines are represented by about 50 members with about 500 co workers The work is techno technologically—as well as value oriented

6 Presented by Dr Ulf Landergren and Dr Daniel Sundstrom Future Research in Sweden is gradually growing out of the general progressive and official activities of the Swedish Society Many Institutions participate in the Royal Academy of Engineering an Institute for Studies of the Future now being set up

7 Presented by L M Turner (England) This Salzburg Initiative was taken right after World War II in order to study social and cultural problems and solutions in post war Europe Future Research as such has not been strongly developed although the interests of the Salzburg group have been almost identical

8 Presented by Miss Doninni General Technological and Economic development have been studied by the Institute IREA Within this Institute has been formed the Futuribili group which now is applying Future Research methods General remarks The various institutions and organizations presented this morning show a rich variety of methods disciplines and interests At the initial stage these initiatives differ more than perhaps will be the case in coming years

*April 15 10 00–11 30*

**Moderator** HENRY DAVID

Reports were made on activities and organizations concerned with the future in seven countries—WEST GERMANY HOLLAND DENMARK VENEZUELA ITALY FRANCE and the UNITED KINGDOM—and on an international scale (UNESCO) Most of the national activities and organizations display either in their work or in the range of their perceptions an international or even a global dimension All of them are concerned with one or several aspects of the problems of human development—either individual or societal—in the future

Virtually all of the activities and organizations have what may be called an action dimension in the sense that they hope that what they do will make a difference in the way societies perceive and shape their futures One Work Group 2000 is primarily an action oriented group

With one exception—UNESCO—all of the activities and organizations are young in years and some have become operational only in the last year or two They are moreover very different in their focus forms of organization funding and constituencies Financial support for example comes from membership dues government sources private foundations and contract research Some are engaged in hard research Others see their primary role as stimulation of

interest in the future through conferences congresses study groups and publications Some function as clearing houses documentation centers libraries and the like Others are in the business of forecasting One or two are concerned with the development of methodologies

The range of activities and their goals forces attention upon two aspects of futurology in the present stage of its development (1) the absence of sharp definitions of focus and (2) the ambitiousness of the tasks which the variety of organizations have set for themselves

In addition to the reports scheduled in the program there were the following Mrs Parry on the Pierre Teilhard de Chardin Association of Great Britain and Ireland Mrs Eleannora Masini on Irades Institute for Applied Research Documentation and Study and Serge Antoine who surveyed future oriented research organizations in France both private and governmental which have both a national and international character

## FINAL SESSION

CHAIRMAN Ladies and gentlemen the meeting is called to order This is the final session of this conference and we have some work to deal with First I would like to report the results of the questionnaires which you were asked to complete and copies of these results will also be circulated during the course of this session I would like to mention some of the important points appearing in the questionnaire replies and I will also ask your views on some of the matters involved in the future work of international cooperation in this field

The first question of questionnaire number one asks Do you feel that a new international organization for future research is necessary and desirable? Forty answered yes and four answered no Thus we may assume that the general opinion is in favor of some international organization

The second question asks Do you think that the Kyoto conference is a good occasion for the inauguration of such an organization? Thirty three answered yes and eight answered no We have studied these replies very carefully and taking into consideration the general trend of our discussions throughout this meeting we feel that this conference is far too short to prepare such an organization but rather we might set up a continuing committee to handle the necessary procedures at a later date

There were quite a few suggestions raised in questionnaire number one especially regarding questions four five and six These suggestions will be circulated shortly We received fifty seven replies to questionnaire number two As I mentioned earlier these replies also indicate a need for action toward forming an international organization This was apparent in questionnaire number one but the questions raised here are more specific

Question number one asks Do you favor the establishment at this general assembly of a proponents group for a continuing committee world association? The answers indicate a definite preference for the establishment of a continuing committee at this time

Question number two asks you to indicate the names of the people whom you would nominate as candidates for membership in the proponents group I might remind you here that this is not quite voting but rather learning the views of the participants in this conference Before mentioning the names we received I would like to ask the floor if you would agree to establishing a continuing committee There have been some suggestions raised in the course of our discussion of Tuesday morning One of the suggestions proposed that we pick several members of the continuing committee here and after careful deliberation perhaps add some more members especially from the Socialist and developing countries Another suggestion was that we establish a continuing committee



comprised of twenty one persons and that they be located in Paris or somewhere else in Europe I would like to know whether or not this suggestion in principle is agreeable to all of you If it is not are there any views that you wish us to hear? Then I take it that this assembly approves of a plan to develop a continuing committee the members of which shall number twenty one seven members to be chosen here and the remaining two thirds for careful selection afterwards

**SPEAKER** Mr Chairman I welcome the apparent decision of the group to take the next step toward the creation of an international organization I think some further thought might be given to the size and manageability of the continuing committee or the organizing committee I think further that some decision might be made if the dimensions are as large as those suggested to create an executive council within it to facilitate action I am however more concerned with the tasks which will be set for the organizing committee I would like to suggest reasonable tasks for the coming year I addressed a memorandum to Dr Kato in March and I would like with your permission Sir to read a point from it I said it would be feasible to assign the small organizing committee with the task of developing subsequent to the conference a draft document Firstly delineating the objectives structure membership and functions of the organization secondly recommending the steps to be taken that would bring it into being and thirdly setting a time table for accomplishing this end Such a document would be circulated by the continuing committee to those who have participated in the conference Discussions of this matter for comment on the basis of which the group or committee would prepare a revised and final version would serve to solicit membership in the new organization I think these are reasonable tasks they can be moved on with relative rapidity I add one further thought namely that such a working group has to be made up of people who have a strong feeling about the worth of an international organization and are therefore willing to work on these or similar tasks And next that such a group should be adequately supported with funds which would provide for travel and a secretary I would not see any disadvantage in inquiring for example of UNESCO or other private foundations of possibly securing support not of a continuing or subsidy nature but merely over a period of time to bring an international body into existence UNESCO has had such a relationship for example with ICSU International Council of Scientific Unions It has helped give birth to international structures of various kinds and I would hope it would be reasonable from UNESCO's point of view to invest a modest part of its resources

**CHAIRMAN** Thank you very much Are there any other views?

**MR SØRENSEN** I m Mr Sørensen I have been asked by Dr Menke Gluckert to raise some details which will continue the statement by Dr David and also the consensus from the questionnaires Dr Menke Gluckert regretted very much that he had to leave early this morning There are certain detail to add to the consensus and also to Dr David's statement which I think we should bring up now They all relate to our relationship with the outside world

First of all I think we agree that since we want this work to be expanded into all the three worlds—the Western the Socialistic and the Developing World—we should not definitely form the association before these people can be in on it I think we all agreed on this the day before yesterday as a necessary precaution

Secondly if we want a greater number of young people into the work we must have money to finance their participation in the next conference and in smaller regional conferences in the meantime In order to get money there must be a minimum of old fashioned formalization in order to send letters concerning money to bankers industrialists and UNESCO The young people may not like this but I am still in favor of what I called in regard to Sweden the revolutionary establishment We are giving this establishment away to you in a few years when we are in our graves so do not worry about it

Menke Gluckert and I would like a definite letterhead for applications We also want a name of the organization Firstly I should like it to say World Association for Future Research This does not say anything about individual or collective memberships We should take this up later The letterhead should also mention an organizing committee in a way that the word organizing is left somewhat open as to whether it describes something in existence or something to come later Then we should try to set this Paris office in connection with Bertrand de Jouvenel—a prestige name but a name that is very much alive It should be in the same city as UNESCO in order to set up luncheons and meetings easily with UNESCO people I hope we can agree upon these simple formalistic details today in order to send letters to solid conservative foundations such as banks and companies This committee should also do some work that will show that these groups are alive and cooperating Firstly there should be a number of small symposiums seminars and conferences concerned with the future for example of agriculture or urbanization It would be unfortunate if they did not know about each other in order to make it an international project In that respect the committee should do some work throughout those two years The Japanese could approach other countries in your part of the world and perhaps you could look into setting up regional groups of more than one nation in various parts of the world We could also make the first tentative approaches to the Socialist and Developing countries

In one year or so we should have a meeting of thirty people from all over the world in order for the Japanese Latin Americans and people from North America to meet and discuss their progress and perhaps indicate further work to be done

I feel that the committee should submit detailed proposals for the constitution of the association Finally I think it would be good if we could reach a consensus here as to the next country to hold our third conference Peter Menke Gluckert and I propose Tanzania because we feel that Africa South of the Sahara is a bit easier for a multinational conference The village people are not burdened with an old high civilization which they must protect They do not feel their souls involved with their civilization to the extent that the Europeans and Asians do for instance Someone in the morning session made reference to the developing countries It may be possible for some countries to skip what we call the industrial period and to pass directly from the pre industrial to the post industrial period I think this would be especially true about some parts of Africa Tanzania is one of the places where we could study that This is in principle what Menke Gluckert and I have been discussing which he has asked me to present Thank you very much

**DR DROR** In line with what has been said, let me add a few words in reference

to the underlying theory based upon the proposal just made. This theory goes back to the Oslo experience as has been reinforced and improved throughout this conference. What is being proposed is to set up a non organization a network that would encourage a multiplicity of activities not excluding or restraining any activity and not making any effort to colonize the future of future studies for the next few years to quote an excellent phrase of Johanne We should provide a framework which provides encouragement of interest in the future within the large groups not represented here by not providing the negative outcome of a rigid structure. I think that the efforts to organize a non organization will be much more difficult than the efforts to organize a standard organization. My feeling is that the success or failure will depend on the personal commitments of those members of the group located near Paris. I hope that there is an effort to structure the group in a way which will not exclude anyone in the sense of having any political connotations the hope being to provide an organization for every group interested in the future. Thus we also want to avoid the concept of a professional association the idea being to provide a framework which will stimulate and not restrain activities.

CHAIRMAN Just one second

DR SØRENSEN That which Dr Dror said should really have been in Menke Gluckert's statement on my part. Let me add just one thing. Although the committee has been instructed to prepare the constitution of the organization the committee must not make any irreversible decisions as to what kind of membership it will have but make suggestions which we can decide upon during the next conference. Is that satisfactory?

DR BILL SIMMONS Bill Simmons United States. I would like to suggest that the first act of the organizing committee be the design of a comprehensive questionnaire carefully structured to cover most of the points we have raised here. This questionnaire will be sent to the members here as well as to the people that Henry David mentioned this morning so that we will have in organizing a more representative idea of what everyone in the world is looking for in this organization. Obviously the organizing committee would not have to use in detail the results of this questionnaire but at least they will have a better view of what the world at large was thinking than what they could possibly get from our group here. Thank you.

DR HENRY DAVID I would like to submit again the thought of an organizing committee on future research should not be charged with a set of operational activities. I also suggest that it undertake to understand what is happening in the world internationally. Mankind 2000 International is one illustration and that it spent some time deciding what kind of reasonable organization with what kind of needed purposes can be suggested. I would also like to suggest that we exclude except by way of suggestions decisions for the location of the next conferences the nature of regional meetings and the like. I would regard all suggestions made as inputs to the organizing committee. If it wants to follow Bill Simmons suggestion of a questionnaire that would be obviously sound but it seems to me that we ought not confuse operational activities in the course of the coming year with the design of institutional framework. I do think that a framework however flexible it may be must be constructed in a way that we can bring together under a common roof a wide variety of activities. So I urge

again that the members of this meeting try to focus on the primary item on our agenda and try to devise the reasonable steps that may be taken towards this realization.

DR FELIX KAUFMANN I would like to second that which Dr David has suggested. I think it would be a mistake to rush any decisions concerning location of the conference. Dr Kato has done a magnificent job of marshalling a great number of people with knowledge of languages organizational skills typewriting skills and all the things that it takes to run an organization successfully in one of the most literate and densely populated countries of the world. I think that the suggestion that a similar venture could be successful in a place like Tanzania however attractive and charming is preposterous. Anyone given the task of recruiting a staff of interpreters guides electronic equipment etc in any but a highly civilized country with a great number of literate people would end in a dismal failure. There are some countries that have not fully developed yet but that can provide such facilities. It is a charming idea to show our devotion to development of the third world by suggesting such a location but I hope we have shown our goodwill by suggesting it. We will not actually risk a total non organization by actually venturing into such territory. I do not think either UNESCO nor any bank nor any rich organization will underwrite the colossal cost of transporting many skilled interpreters and secretaries to a location in East Africa. Similarly some of the other suggestions for non organization seem impractical. They will imperil the whole venture and I think it is good that something should be unstructured. I do not know of any organization that dispenses large amounts of money to finance trips to a very distant location for a large number of people whose only qualification is that they are young. I am very much for youth participation and I think it is the youth of the world who hold the future in their hands. Some of us here may never see all that we are talking about but the younger generation will and they will have to administer it. It will be good that they are there participating but let us be practical. Who is going to pay their fare? We should ask universities to send the best graduate students. There is one graduate student here who has made a colossal contribution to some of the things we need and we must look for young people with qualifications that will enable us to persuade financial organizations to help finance their trips.

DR IYENGAR Mr Chairman I am Mr Iyengar from India. I was very much interested to hear the various suggestions concerning the excellent work that has been done here. At the same time I must express my disappointment concerning the response to the questionnaire. Out of two hundred and fifty present only fifty or fifty five responded. It is quite clear that only fifty to fifty five voted to have a continuing organization and the others are apathetic and not really very much concerned. I feel we must have a continuous organization to carry forward this work but whether such an organization should be located in Paris I question strongly. A large number of people belong to the developing countries and we do not many times understand their problems. It would probably be better if we locate such an organization somewhere near the developing countries. Perhaps a better place our host country itself Japan which symbolizes both the East as well as the West. I do not know how the Japanese will respond but we would be very happy if the organization is located somewhere here. In regard to

other doubts expressed concerned with holding a conference in a developing country it is true we may not be able to provide such excellent facilities as our host here however an advantage is that the people can focus their attention to the possibilities of the future Although I have not discussed this matter with my government India would be happy to play host for a similar conference if it is held after two years We have similar facilities and if this conference is organized in Delhi where we held the UMPA conference I am sure we can be in a position to make it a success My only plea is that it would be better if we had waited for the other countries to form similar future organizations and then hold a representative meeting Unfortunately that has not occurred and consequently whatever decisions we make may not be representative Thank you

CHAIRMAN Thank you very much Mr Iyengar There are several people who want to speak out May I remind you your speeches or statement should be very short to save time

MARIA HOLLO JANOSSY My name is Maria HOLLO JANOSSY and I am from Budapest The questions I would like to raise are How and why are we organizing the next meeting? Should we hold the conference in a Socialist country or in one of the Developing countries? I think it is necessary that delegates from the Socialist countries should elaborate further on this subject I must tell you I am not an official delegate of the socialist countries We want to talk here in our own names and not the names of a certain organization so I speak for myself and I speak as a member from Hungary Firstly I think it is very important to keep a permanent commission for future research and I do not think we would feel colonized by that committee Last year we were pleased to receive news letters from Hidetoshi Kato and other colleagues telling the events of the conference It is important that we have a committee doing nothing but gathering news and sending it to the other members

Secondly I think it best for the Socialist countries and possibly for the Developing countries to have our organization under UNESCO's sponsorship since UNESCO is a world organization that no one can say anything against politically and then we would not need to create a new bureaucratic organization Everyone knows the aims and framework of UNESCO and UNESCO can always find the political and social solution in order to take the next step even when political situations are changing in many countries If any organization is created in the framework of UNESCO it is against the policy of Socialist countries to say anything against our policy or planning economy I think one of the reasons there are so few here representing socialist countries is because it was arranged in Japan and financially it is difficult for socialist countries It would be the same if not worse for Tanzania or another far off place Young people will not have the money Only people who have two or three doctorates and have written several books can afford such a journey I believe Mr Kaufmann this is a problem We have good interpreters and technical equipment although we have not such a marvelous conference hall

There is another issue I would like to stress The advantages of holding the next conference in a socialist country The topics we are concerned with involve industrial society and ethics We need to select a developing country that can understand the problems of very highly developed societies such as affluence and problems of leisure and other problems of a post industrial nature

Robert Jungk raised a question yesterday during a discussion on Swedish TV He asked Why is there not much being done in socialist countries in future research? I say there is some future research but it is not good If we organize the next conference on future research in a socialist country all the research that is being done up till now under other titles (planning economy structural change in society or discussions of prognosis programs) can all fall under one program So that is all and I thank you very much

CHAIRMAN Thank you very much Madam HOLLO JANOSSY

DR STEENBERGEN My name is Bart van Steenbergen I should like to make a few comments about the foundation of a future world research association We represent a small part of the population of this planet and we are predominantly from Western highly industrialized capitalist countries In order to reach as many people as possible we should make a creed This creed must state that we are not only concerned with the future but with the democratization of the world and a basic solidarity with the poor

Well Ladies and Gentlemen Mr Chairman we lack an objective We can never have a meaningful dialogue without an objective I hope we all agree We are going to have an objective it must be formulated by those who will have to live in the future We need a participatory process to state the objectives—without certain objectives we will be unable to decide upon working methods and agendas Our task should be No 1 To choose three to five people whose task it will be to find the objectives and values that prevail among the people concerned with the future—many more than are here now No 2 To endow this small group with the necessary resources to carry out No 1 No 3 It is our task to organize this group and it is the task of the group to formulate their findings in order to make suggestions as to how we will carry out future research activity

This small group of people will prove either the viability of future research or the inability to contribute fruitfully in shaping the future We shall evade the risk of self perpetuation which is most necessary for future research a new science the first of the new sciences instead of the last of the old sciences Thank you

CHAIRMAN Dr Lee

DR LEE Thank you Mr Chairman There are more than 50 people favoring the Japanese architect colleague Mr Kitagawa creating in and destroying types of instruments for ourselves In this session we should establish a small group of seven to eleven persons to discuss the themes for future explorations and the location of the futuristic conferences I do not think we can gain by continuing on this United Nations type procedural debate as I was ten years ago and I know how futile it is We should avoid behaving like some apolitic pioneers in a new religion of the future mainly because this is not a future movement—this is a study of the future and we are researchers about the future Thank you Mr Chairman

CHAIRMAN Well ladies and gentlemen we should like to wind up this discussion with two more speakers

DR STANLEY LESSE Stanley Lesse New York I believe that there seems to be more opinions like the last two gentlemen that imply that when a baby is beginning to walk one does not worry about how he is going to perform in the Olympics I guess we are in the position of being the infant If I use that image I would

be strongly against associating any new organization with any other organization—even one as lovely as UNESCO. That would be like putting a kidney with little atherosclerosis into an infant which I do not think would be good. This child should be unique and should find its own growth. This child is still learning to crawl and it will get milk. I think our biggest problem is money—at least in the Western world and I think it is a dangerous disease—gold poisoning.

My other point is this. It appears to me that along with what the last two speakers have said, what any organization needs is an executive. That central person and I think it is a person with energy may be appointed by this group. This is the beginning. The person may be like Dr. Kato who has his qualifications with his guise to act as his executive director temporarily with few persons appointed—whether Dr. Kato or not—who would have a commission to develop the idea. He should have a commission to organize another meeting after thinking about all the positive and negative points in this meeting. The last point I would like to make is that there is a dangerous word floating around and that is group. I think that word is wonderful societal but I hope the people saying group are not going to admit individuals into some international body such as this. Thank you Mr. Chairman.

CHAIRMAN: The last speaker over there.

DR. CHRISTOPHER WRIGHT: Christopher Wright, United States. An organization is not an end in itself, neither is a conference an end in itself. It would be a mistake to think that those of us present today have any authority to vote or pass anything. The conference does have its part of a larger objective obviously. We're only part way through and there is a lot of work to be done. If I understand correctly, the proceedings are going to be published. I hope that in the process of publishing them there is rigorous editorial activity to structure the reports in such a way that we will all have a clearer picture of what has transpired here than we can possibly have today. This conference has achieved at least three important objectives. It has provided a vast array of raw material in written form. It has allowed people with many different persuasions, many different backgrounds, many different hopes and aspirations to meet. This will make it easier to read between the lines of their writings in the future. It has also helped us identify some, and only probably a fraction of the groups that somehow feel that their work is related to work of other people who are represented here. Now we are simply at midway in the process of digesting information about each other as persons, about groups, and about ideas that appear in the reports. It seems to me that the clear objective is to find some efficient, simple, non-organization or minimal organizational way to carry on from here and to work with the raw material. I think a logical consequence to this is that the initiative must rest with the organizers of the others will be drawn in as they see an opportunity to carry part of the activity further. But I hope we do not leave this hall today with the impression that the conference is an end in itself and that this last session will end giving some mandate to some further organization. I think the secretary has both an opportunity and obligation to encourage the further analysis, refinement, classification, ordering of all that has transpired here. Some of it is in the form of written material, a great deal is in the form of their own experience. Why is it that some people are here and other people are not here? This is a very valuable piece of information and it ought to be dealt with in any further

development. Why are some organizations more prominent here than others? It seems to me that if we are in an evolving world we will need to have some kind of arrangement to build what we have and treat this as raw material and not as a finished product.

CHAIRMAN: Thank you very much. I recognize that there are quite a few other people who want to speak on this subject but I am somewhat concerned about this discussion and its duration. I recognize there are some differences of opinions among participants but at the same time there are some agreements. There is a general agreement to have a preparatory committee or continuing committee which will follow up this meeting. This should not be of a very large size but relatively small number—small number of members. Concerning the next meeting I also noted some differences. You will be getting the result of the questionnaire concerning the place of the next meeting. But again this is a matter of the future. I feel there should not be any definite steps taken at this conference. After listening to these comments, the committee, the preparatory committee or continuing committee which is to be established should be assigned several tasks. Number one to establish a small secretariat. We need some organization to proceed anyway. The second is to find institutional support for the continuation of the work. Some people may not like this but we may need some financial support. The third task is to prepare the Third World Congress possible in 1972. In regard to the place of the conference and its possible theme, these will be more or less in accordance with the opinions expressed here in this conference and also the views expressed in the questionnaire. We have quite a few items for the theme of the next conference in the answers from the questionnaire. You will see the topics from the circulated prints. This committee may be asked to prepare a timetable for the establishment of a list of the World organization. This is still controversial and this is something to be decided at the next conference for general assembly.

DR. DAVID: Forgive this intervention Mr. Chairman but as a point of information would it not for the sake of the record be useful to act in a formal fashion upon the recommendations you have set forth? If you would entertain a motion I would say it be resolved that the participants in this session of the IFRC adopt the procedures set forth by the Chairman in his last remarks.

CHAIRMAN: Any objections to Mr. David's proposal or suggestion? If not I take it they are approved. There may be another task for the committee. As I mentioned earlier the answers to the questionnaire were not taken as voting but as different material. These names appeared five or more times in the replies to the questionnaire: Dr. Kato, Dr. Jungk, Dr. Galtung, Dr. Menke, Gluckert, Dr. Winter, Dr. McHale, Dr. Dror, Dr. Sørensen and Mr. Bertrand de Jouvenel. I notice that the names given here now may be people very effective in implementing the task assigned to the committee. If we stick to the total number of 21, this may sound like it is too many but if we cover various areas and various fields it may be right. If we stick to this number then there will be a remaining 12 seats to be filled after careful consultations. The people selected for this group should be from as many areas as possible. That is the suggestion from the chair. Yes?

SPEAKER: Mr. Chairman, it seems to me that a disproportionate number of the names you read were from a small area of northwestern Europe. I know that

the people you read from highly civilized and desirable areas of the world and have done a lot for future research. I think it would be wrong to omit any representation from slightly less developed countries. I would like to nominate Dr Lee from Seoul. I also feel there is a disproportionate absence of names of people from the United States. I would like to see Dr David on any such committee. I consider a committee of 21 people totally unwieldy and will add to the idea of non organization which is not a good way to organize anything.

CHAIRMAN Oh yes. I should have mentioned that the Europeans do have a dominating number. Six out of nine. And I should like to suggest that in case there are 12 additional members we should not add any more Europeans but rather have people from other areas of the world represented. Of course this should not be too strict but this might be desirable from a more equitable distribution of geographical areas. The suggestions can be taken up by the committee. We have four people recommending Dr Lee on this committee and the reason for not including him is because the socialist countries and developing countries are under represented here which requires careful selections. This should be left to the committee and most likely the names given here can be counted as possible candidates for filling in the remaining members. Mr Sørensen.

MR SØRENSEN I think our American friends brought up some touchy questions as to the geographical distribution of members. Really we have to choose between two principles—one is to do equal justice to all parts of the world and another is to select a committee that can meet frequently and easily. If you follow the first you must supply funds for a number of people to travel half way or all the around the world. It is quite true that there is a predominance of northwest Europeans. The reason is simply that they can easily meet so that the committee can work and Paris and UNESCO is an important building block for this. I think one can do justice to the other geographical areas in the world by making the committees capable of rotating so that when we are more settled as to deciding upon congresses the majority of members can be from the area designated. Although I am a north European I would support that the majority were north Europeans if we are to work closely with the UNESCO office. We should forget about doing equal justice to all the geographical areas of the world. We are not provincially minded anyway.

DR LINSTONE Harold Linstone. I would like to make the following comment in regard to the representation or non representation of the various areas of the committee. I think it depends on the objectives of the committees. Communications are the prime objectives and that means planning new meetings and possibly a bulletin on activities of various groups. If this is the kind of activity that is going to be involved I can see great value in the Sørensen idea of having people physically close together as they are in Western Europe. If the objective is going to be more grandiose more fundamental or more far reaching than communications then I think the representation indicated is rather absurd. Thank you.

DR SIMON Simon from the United States. This is Thursday and I find the future has already come true. I see Dr Galtung's model already presented and although I would not want to accuse the Europeans of being parochial it is interesting that the Western European plan was to organize in Paris and to have the committee held in an underdeveloped country which happened to be Africa

made up of all the northwestern Europeans. This of course coincides directly with what Dr Galtung suggested Tuesday afternoon. I also see a futurist in action—Dr Sørensen with his suggestion of two alternatives. One which is impossible to make an equally representative body of people from all parts of the world. It is quite impossible to have a committee like that but I think it is possible to have people from several different races of the world represented who have different viewpoints of futurology. I would say that it is absolutely essential considering the magnificent work of the Japan Association of Futurology that their president serve on this committee. Dr Lesse should be on the committee and I think we should have several or many Western Europeans. I would like to see some diversity and although none here are secular or parochial there are occurrences and forces that make each of us look at the world differently.

CHAIRMAN If you take the number of Europeans—six out of nine it seems like they are predominant but if you consider six out of twenty one this may not be so overwhelming.

SPEAKER For the sake of history let me just observe first of all—Oslo was three years ago and those present will remember we ran into the same problem. The United States versus Europe—I belong to neither so I am in a neutral position. Also mythological approach versus normative approach votes at the meeting versus another concept of democracy. The result was that nearly nothing happened at this conference because this was a real problem. There is no easy solution. May I make the following tentative suggestion. Membership in that committee to judge from the experience of the Oslo committee is a purely nominal function. A nominal function in the sense that those who can meet do meet and do something. So the question of how to satisfy the criteria of being willing and committed to do something once located and supplied with resources so that activity is feasible. An optimal solution goes beyond my imagination but I would like to suggest the following. We decide to set up a committee of 21. We now elect 6-10 persons who appear on the list and we charge these people with enlarging themselves to 21 within one month. At the same time I would suggest that persons who are willing to participate in that committee present their names to let us say Dr Kato with his permissions. My own feeling if I were a member of that committee would be to pick those who are willing to do the work. Thank you.

CHAIRMAN Now I would like to conclude this discussion although I notice that we are having some difficulties in reaching a unanimous agreement. There is another thing we have to discuss. This is a draft agreement of this conference prepared by the Executive Committee. This will be circulated to you now and might just go through it in case you have suggestions to modify or to add or delete from the text.

DR DROR I really must express my uneasiness upon receiving such an important document at the last minute of the conference. Let me recommend for the future that any such document be distributed a day earlier so that we can discuss it in detail. I would like to illustrate eight or nine points which I think require improvement although I think it would be a hard thing to vote on such a declaration. For instance on the second line to say that they discussed all the possibilities open to mankind is intellectually hopeless. Certainly we did not discuss all possibilities. Then in the third paragraph to say about ourselves that we made

an extremely productive and interesting report is very self reflecting and I would prefer others to say that we did some useful job. Looking at paragraph number two we have in many academic fields. What about humanistic, ethnic and emotional fields? Paragraph number four. Do we really want to start a new movement? At the end of paragraph number four is it only an intellectual asset? What about religious assets, ideological assets or psychological assets? So we really want to realize a better future or open up for the future a possibility to select for themselves better futures?

After five to six days of serious work at this conference it seems to me that this text does not really express the important work done by the organizers and the sincere efforts and achievements of the participants. I would therefore suggest that we set up some sort of drafting committee to plan a careful summary of this conference in order to express in an accurate and fair manner our striving to contribute something to the study of the future.

DR GLENN PAIGE I would like to offer a short resolution of what I feel to be the essence of the Kyoto conference which is simply That the International Future Research Conference in Kyoto in April 1970 calls upon all persons in the world with special interest in the study of the future to communicate their interest to Dr Hidetoshi Kato in order that mutual awareness among persons with such interests may be facilitated on a world scale. Thank you.

CHAIRMAN May I mention another concern that was revealed in our evaluation of the questionnaires? We have noticed a common interest in providing some sort of communication center for the exchange of studies and information regarding future research. The Futuribles International in Paris has been suggested as an instrumental organization along with the 29 other organizations represented here in this conference. We should encourage these institutions to exchange reports of their progress in studies and findings.

I must apologize for the very short notice of presenting the summary draft. The Executive Committee was hesitant as to whether we should have this type of document at all but we felt that some short statement would be very useful for press release. If we could agree to the text with some refinement we should be very delighted. Also a possible addition to this could be that the conference decided to construct a small continuing committee to follow up this conference. Is that agreeable?

DR DROR I think that a press release expressing the main motives of discussions, assumptions and formulations during the Kyoto conference including the establishment of a continuing committee is quite agreeable.

CHAIRMAN Thank you very much.

SPEAKER Mr Chairman I think that we ought to have a clear understanding that this paper with its stated objective does not serve as a charter to this committee. I specifically refer to the statement we strongly feel the need of starting a new movement. There were many opinions expressed today that are contrary to this statement. The purpose of the continuing committee was to have been communications among the various organizations and the planning of the next conference not the initiation of a new movement.

CHAIRMAN I think we should modify the statement concerning a new movement in view of the discussion here and I shall take into account the points you

have raised. If you agree then Dr Kato, Dr Dror and myself shall refine the statement. Thank you very much.

DR JUNGK There is one more point I would like to bring up before the close of this conference. After Oslo it was not by accident that we thought about holding the next International Future Research Conference in Japan. We thought that such a conference should be held in a country which has seen the end of an old world and where we hopefully thought a new world might emerge. We even thought then that the next conference should take place in Hiroshima so James Wellesley Wesley traveled to Hiroshima to discuss the matter with the town council. The council felt that the technical facilities in Hiroshima were not adequate for holding such a conference and it was there that Kyoto was suggested. I am glad that we came to Kyoto not only because it is so beautiful but also because we received the incomparable abilities of Dr Kato. We have seen here an extraordinary technology of communication which imposes few restraints and which allows relatively free and easy movement. Often we are bound to rooms which are too big just because they have the microphones. The communication methods used here give us the hope that through future research man will prove to be stronger than his instruments.

Again we wish to thank Dr Kato for being an excellent host. Thank you, CHAIRMAN. Thank you Dr Jungk for your kind words. May I ask Professor Ichiro Nakayama to make his concluding remarks for this conference.

DR NAKAYAMA Ladies and gentlemen I am very happy to be the last speaker this afternoon. After the hot debate over the continuance of the preparatory committee and the general appeal to the public from the Kyoto conference there has been much discussion. I have learned so many new things this week through the representation of the different countries and different groups. What I have learned from all of these discussions I have summarized to go something like this. We are living in an era of enthusiasm for the study of the future and the desire for the betterment of mankind. One hundred and fifty years ago another student of the history of social science began a new science of statistics. Adolf Kitley believed in the future of man through the use of statistics as a means of reaching higher and more exact knowledge of human society. He even thought about the revolution of the virtue of man through the use of statistics and he had no fear of the future.

Today we are not in such a simple, easy situation. We have many fears and see many dangers ahead of us and this is one of the reasons we have enthusiasm for the future. Our objectives and motives are so varied that we find it quite difficult to reach a general consensus regarding our goals and values systems. This is unfortunate but if we want to have a better world in the future if we desire the betterment of the living standards of the people in the developing countries and different social and economic systems we must strive to influence the future in order to avoid the possible dangers and mistakes that mark the history of mankind. We have many dangers ahead of us—war, nuclear weapons, etc.—and because of this we feel that the study of the future is of utmost importance. Since we are fellow travelers in the future we must be aware that the necessity of education lies primarily within the futurists themselves and not upon the public. I believe this to be quite an important aspect of our work. Thank you.

CHAIRMAN Thank you very much There is a brief business announcement from Dr Kato

DR KATO Thank you Mr Chairman The first point I would like to make is not strictly business but with permission from our Chairman I would like to have one of the decisions modified regarding the press release Since my task was to administer what has been decided by the Executive Committee I think that both President Nakayama and Chairman Hayashi should be in charge of this final important task rather than myself

My second point is that since this is the last afternoon of our conference it might be a good idea for the tentatively nominated continuing members to get together for a while and discuss any business that they may have

Finally as we announced in our newsletter there will be a dinner at 6 30 followed by fireworks I hope to see all of you there Thank you very much

CHAIRMAN Thank you Professor Kato I must express my deep gratitude for the cooperation of the participants of this conference and with that I now conclude the Kyoto conference on future research

## AGREEMENT OF KYOTO CONFERENCE

We gathered in Kyoto in early April 1970 as members of human society transcending national borders and races in order to discuss most possibilities open to mankind in the future society

Technological innovation has already brought to mankind many new possibilities but at the same time we have to recognize has given rise to many uneasiness This is the reason why we picked up as the common theme of our discussion The Challenge from the Future rather than The Challenge to the Future

For one week productive and interesting reports and presentations were made by 28 future research groups and 280 individuals Although our discussion covered general and wide ranging areas we found the following agreeable among ourselves as some of the outcome of our discussion

- 1) It is a common task for all mankind to explore the possibilities in the future and try to seek among them actions that we can take at present
- 2) In order to achieve this it is necessary that a discussion be continually carried out on interdisciplinary basis drawing upon all available achievements in many disciplines and fields transcending national borders races and ideologies
- 3) Many groups aiming at future research are now being formed throughout the world and their number is ever increasing This is an outspoken evidence that the need to establish a comprehensive perspective towards mankind's future is now increasingly recognized
- 4) Under these circumstances we strongly feel a need of reinforcing activities of international nature in order to make this even more fruitful It has to be such as to establish ties with and supplement the activities of existing future research organizations and also to bring about the results that will become a most valuable asset in the human society
- 5) We propose that this Kyoto Conference be made a starting point to initiate specific activities

Here we should like to appeal to the people around the world who have urgent concern over the future of mankind Let us pull together our individual study and knowledge concerning mankind's future on sustained basis and in so doing mutually deepen our understanding about the future so that the results of our study be reflected upon the selection of future courses by all mankind for the realization of better futures to encourage such activities to improve future research to improve communication among interested persons and groups to engage in preparations for establishment of a worldwide organization and to

prepare the next World Future Research Conference in 1972 the Kyoto Conference established a Continuing Committee composed of the following persons

Yehezkel Dror	Johan Galtung
Bertrand de Jouvenel	Robert Jungk
Hidetoshi Kato	John McHale
Peter Menke Gluckert	Arne Sørensen
Ernest F Winter	

This committee will coopt additional members to try to reflect various future research activities going on around the world

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