

HUMAN NEEDS NEW SOCIETIES SUPPORTIVE TECHNOLOGIES

COLLECTED DOCUMENTS PRESENTED
AT THE ROME SPECIAL WORLD
CONFERENCE ON FUTURES RESEARCH 1973

VOLUME I

IRADES
Institute of Research and Education in Futures Studies
Roma (Italy)

WORLD FUTURE RESEARCH CONFERENCES
Continuing Committee



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PUBLISHER'S NOTE

In these volumes the reader will find a collection of documents written for the Rome Special World Conference on Futures Research, 1973.

Because of the great number of papers included and because we wish to preserve the authentic note of this self-preparing conference, the documents are reproduced in form and aspect virtually as they were submitted by their authors. The material is arranged to follow the order of preparation and the procedure of the conference.

Thus, references to the conference procedure are followed by the documents written for the different work groups, arranged in alphabetical order of the writers.

The summary, published in each volume, will help the reader find the documents of special interest to him.

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FOREWORD

This collection of the documents presented at the Special World Conference on Futures Research, held in Rome in September of 1973, is intended to disseminate the diverse ideas presented at the conference by those participating.

Towards this end, it was thought best to publish the documents in this simple form and rapidly, on the consideration that it is more important to release and circulate them within the shortest possible time than to issue them in a finished book form.

This decision will explain the informality of this volume and the reason why the papers have not been edited but rather presented as they were written by their respective authors. To clarify the circumstances in which these documents originated and indicate how the conferees developed together a particular way of viewing the future, we herewith recount a brief history of the conference itself.

The Rome Conference followed three preceding futures research conventions, sponsored by the World future research conferences, Continuing Committee: Oslo, 1967; Kyoto, 1970; and Bucharest, 1972.

During the conference in Bucharest, various participants agreed that the next conference, to be held in Rome, would be "special" in various respects.

"Special in its specific theme referring to man and his needs, with man, his survival and self-realization as the focus; "special" because the number of participants was to be limited; "special" because the theme would not be defined by a few specialists at their work desks, but rather developed by the whole body of participants who would give expression to their thoughts and individual sensitivities. Thus, they would come to the conference prepared to debate themes vital to this historical moment and to the future, themes in which they are deeply involved.

From this work of development, growing in concentric circles of participation, with exchanges of ideas and documents, emerged the overall theme of the conference and the sub-themes of the various groups into which it was divided.

Following the conference, the documents developing the themes are being issued in the following publications:

- 1. A volume entitled HUMAN FUTURES, prepared in collaboration with Futures, IPC House, Guilford, Surrey, England, giving the background against which the themes developed at the conference were based, prepared by John McHale from papers written by James Dator, William Simon, Lewis Mumford, Maurice Guérnier, Sam Cole and Craig Sinclair, as well as the conclusive documents outlining the indications for action to be formulated in the group and to be subsequently developed, and an analysis of these proposals by Harold Linstone. The work also contains a synthesis on the current state of futures studies as revealed during the course of the conference, written by Yehezkel Dror. The volume is introduced by the presentation prepared by Bertrand de Jouvenel.*
- 2. This collection, separated according to groups, of all the documents presented at the Conference except those published in HUMAN FUTURES, with the basic papers in abstract form (to give the background of the work).*
- 3. A report on the genesis and development of the work done by the groups, together with a critical analysis of the work. This report was drawn up by the organizers of the conference and the various group secretaries.*

The present collection is issued in five volumes. The first includes the documents written prior to the conference; the panel papers, purporting to stimulate the groups (such was the intention); the abstracts of the basic papers; and the papers of Group 1 on human needs, the group's central theme. (1) The other volumes consist of the documents according to their various presentations in the groups. The fifth volume includes the papers of Group 9 and the evening groups as well as those presented at the open public meeting and others related to the general theme.

The purpose of this undertaking is to assure that every voice heard at the conference is also made known in the documents, so that the reader can grasp the stage at which each country has arrived in these studies and according to every point of view; certainly, no document can be truly understood in all its implication simply in the form of a synthesis or analysis.

We hope that this final effort by those who organized the conference will be useful despite its informality. Indeed, informality was sought for as the prevailing mood both in the preparation and development of the conference.

(1) The abstracts are not duplicated here since they were written only for a general exchange of ideas among all participants during the preparatory phase of the conference.

CONFERENCE PREPARATIONS

MEMORANDA

ROME SPECIAL CONFERENCE ON FUTURES RESEARCH - 1973

Memorandum 1

TITLE : "Human needs, new societies, supportive technologies."

DATE : Beginning September 25, afternoon, Tuesday; closing September 30, morning, Sunday.

HISTORY: The conference emerges from an agreement between the Continuing Committee for World Future Research conferences and IRADES (Istituto Ricerche Applicate Documentazione e Studi) specialized in social and human forecasting. The conference follows the first world conference in Oslo, 1967; the second one in Kyoto, 1970; the third in Bucharest, 1972.

PLANNING STRUCTURE:

The conference planning structure results in the following:

- 1) Scientific Council responsible for the lines of the programme and is at the present time formed of:

Professor Francesco Alberoni	(Italy)
Dr. Vincenzo Cazzaniga	(Italy)
Dr. Robin Clarke	(UNESCO)
Professor James Dator	(Hawaii - USA)
Dr. Jacques Delors	(France)
Professor Denis Gabor	(England)
Dr. Lars Ingelstam	(Sweden)
Professor Robert Jungk	(Austria)

Dr. Eleonora Masini	(Italy)
Professor John McHale	(U.S.A.)
Dr. Peter Menke-Glukert	(Germany)
Professor Giorgio Nebbia	(Italy)
Professor Pietro Pace	(Italy)
Dr. Aurelio Peccei	(Italy)
Professor Pietro Prini	(Italy)
Professor Valerio Selan	(Italy)
Dr. Eart Van Steenbergem	(Holand)
Dr. Ota Sulc	(Czechoslovakia)
Mr. Wellesley-Wesley	(England)

Chairman of the Scientific Council is Professor Giorgio Nebbia; Secretary of the same Dr. Eleonora Masini.

- 2) Scientific Committee responsible for the programme of the Conference formed of:

Dr. Jacques Delors, Professor Dennis Gabor, Professor Robert Jungk, Dr. Eleonora Masini, Dr. Peter Menke-Glukert, Professor Giorgio Nebbia, Professor Pietro Pace, Dr. Aurelio Peccei, Professor Valerio Selan, Mr. James Wellesley-Wesley.

- 3) Executive Committee responsible for the scientific and organizational implementation of the conference and formed of members of IRADES specifically of: Dr. R. Cagiano, Dr. E. Masini, Professor P. Pace, Dr. M. T. Tavassi, Dr. C. Virgilio.
- 4) Executive Secretary of the Congress is Dr. E. Masini.
- 5) President of the Congress is On. Flaminio Piccoli.

AIMS: Education towards the future of the participating group of "futurists" and of people whose activity has an impact on the future, education in the meaning of action for the future. This means that the group will try to reach indications of action for the future, indications which will find as a consequence development in the course of the year following the conference, the conference itself being a stage of development.

Analysis of the awareness of the future in Italy on the part of political men, industrial managers, communicators, generally the public and further thrust towards such awareness.

TYPE: It is a special World Conference to which about 120 participants will be invited and of which 80 from various countries and 40 Italians, among the first a vast participation from the development countries is hoped for. Among the participants about 20 are considered animators and their contribution will have to be, from the very beginning, the entire development of the conference.

FIRST LINES OF DEVELOPMENT OF THE THEME:

The theme will grow with the participants and as at the present moment still in its developing stage, so is still open to discussion, and this document is the description of the present stage of preparation, while the second document is already the stimulus towards further development. After December the lines of the programme will have been accepted and the theme itself will develop. The theme is considered as a whole and its corner stone is "human needs" and has, for this reason, to be considered in all its interrelations; only as an aid which may help in the initial approach towards identification of the groups, which have to, however, emerge from the suggestions of the people requested, we have thought of it in sections all centered on human needs, but related once to the further and deeper attention to human needs themselves, once to new societies, once to supportive technologies and once towards global interdependence of all men.

The four sections can be presented in the following manner:

1. Human needs with the emphasis on individual needs which because they are such presuppose a continuous tension

between the individual and the group or the collectivity or society. In this meaning the group will subdivide according to the priorities which will be indicated by the people who have been asked for suggestions, but which may be hypotised is for two thirds of the world, food shelter, etc. (first), self-determination, self-expression, self-realization, friendship, etc. (after); the other one third of the world will have opposite priorities. The analysis of needs will be therefore "regional" and based on the levels of development of the various areas. Specifically, once the priorities are verified the study of the second group of needs may be developed further though acknowledging the first group, moreover asking some experts to underline the links of the second group of needs to the first group and viceversa as the long-term requires the consideration of both groups.

2. Supportive Technologies: analysis of the technologies which tend or do not tend to answer to human needs with the specific aspect of technology which is given by the capacity of replicating the accomplishments of a specific end wherever in the world, when the resources are available (see second document). Within this section the presentation of societal models in which the technology has an important role is anticipated, such models capable of answering to human needs; the possibility of analysis of various kinds of assessment of technology is also possible.
3. New Societies: in this section various social concepts and structures should be analysed, social institutions which tend or not to answer to human needs should be known and anticipated, to this aim a discussion and a presentation of solutions from the various socio-political and religious points of view is foreseen, even to the possibility of comparing social indicators.

4. Research tending towards an understanding of global interdependence and limitations of all men, analysis therefore of relations between man and the group (as seen in section 1), possibility in this context of education and communication.

DEVELOPMENT OF THE CONFERENCE STRATEGY.

1) Preparatory stage.

- a) Subdivision of groups within the sections which are purely indicative (about 10) with an animator plus an "operationally minded person" who analyses the theme of the group according to the suggestions of people operating in the field of interest of group (i.e. the central problem of the group is social communication, the suggestions and difficulties of the journalists, of the T. V. people, of the political men are requested) the suggestions are the special contribution of this person to the group.
- b) The participation to the group will be indicated by the interests demonstrated but special care will be given to have the participation of different disciplines to the discussion and solutions of a certain problem.

2) Conference.

25th afternoon:

- opening of the meeting with priming speech plus first meeting of the pre-formed group to coordinate their work prior to the conference.

26th morning: plenary session:

- critical review of one or two people who critically present three or four main papers.
- discussion. (Perhaps presentation of brief report by the spokesmen of the working groups).

26th afternoon:

- working group on problems emerged in the plenary sessions and which may correspond to problems already emerged in the preparation of the conference (other problems may be discussed within the "structured" time contemplated in the time-table).

27th morning - plenary session.

- reports of the work of the groups by the spokesmen and further discussion.

27th afternoon:

- problem solving groups, the groups work on solutions or on obstacles to solutions not on problems.

28th morning: plenary session.

- reports of the problem solving groups by the spokesmen and further discussion;
- plus or structured time.

28th afternoon: free29th morning:

- the groups meet to discuss how to continue the work in the future: operational indications.

29th afternoon: plenary session.

- presentation of the operational indications on the part of the futurists to the public.

30th morning:

- final propositions and planning session.

N. B. The plenary sessions are for discussion, the groups are for solving problems.

We must find a way by which a participant of every group must participate in turn to other groups.

ROME SPECIAL CONFERENCE ON FUTURES RESEARCH - 1973**Memorandum 2**

TENTATIVE PROPOSAL FOR THE FORMULATION OF THE PROGRAMME**General indications**

- I The present proposal tends to the formulation of the programme, the development of which will be the second phase while the conference itself will be the third phase.
 - II The proposal divides itself into parts which we ask the reader and participant to the conference, to complete with questions which he thinks he would like to see answered.
 - III All the work of and for the conference must be done in the awareness of the change we are all living in work in preparation, ourselves participating, the conference itself.
 - IV The range of time we want to analyse is the long-term.
 - V All the work must be oriented towards proposals for solutions to problems and towards analysis of obstacles to solutions.
 - VI We would like to remind the educational element of the conference which was indicated as aims in Memorandum 1°.
- 1) Every individual or group must identify their own human needs for this reason:
- a) we shall try to have as many representations of individuals

and groups fully knowing that we shall not emerge at the conference with a definition of human needs which would be sterile abstraction or with a list of human needs which would always be incomplete, but only with an indication of contrasting needs or with a spectrum of needs from various cultures and contexts which may indicate the urgency of further study and development

b) as a hypothesis we may say that in a reality human needs show priorities in the following manners:

$\frac{2}{3}$ of the world: developing countries

} food, shelter,
clothing.....

$\frac{1}{3}$ of the world: developed countries

} self-determination,
self-expression, identity,
hope, change, creativity,
self-development, self-
realization, need for the
trascendent.....

The priority is the opposite in the developed countries as it is in the developing countries.

Within the second group of needs we could say that we have:

needs for human contact: the family, the group, the nation, the international group (i.e. futurists)

other psychological needs and spiritual needs: self-determination, identity, hope (which is also true for the first group of needs - expectation to survive.), hope for ever more things; change: the restlessness of man; creativity of a few to revive within others who do not seem to have it; the need to believe in something higher than man.

(We do realise that many of these needs may also have a different place in the hypothesis presented, as all divisions they are never completely correct and that what has been previously said is only indicative)

(Please indicate what questions you would like to see answered)

- c) as for aspects of human needs the emphasis seems to be on individual or personal understood in the following manner: needs which assume a continuing and necessary tension let mean the individual and the group, the collectivity and the society, in fact self-identified needs can find a measure of satisfaction or else a measure of compromise with the demands of others, it is a question of exchange and interchange. This is true for food or for self-identity for shelter or for hope etc.

Many are the solutions and the obstacles to solutions of this tension:

(Please indicate them)

The presence of basic determinants as sources of human needs like for instance genetic and ontogenetic may also to be thought of.

(Indications)

- 2) Leading from the operational definition offered by R. Meier, that "technology is a means of accomplishing a specific end which can be communicated so completely that the accomplishment can be replicated anywhere in the world if the resources are made available, we could substitute "specific end" with "specific human needs". It is a reverse of a position: man using technologies as tools in the interest of mankind not man vis - à - vis technologies, technologic development should be a planned solution to man's needs.

Technologies seen in this way related to:

- food
- energy
- raw material
- building, (new towns, distribution of population)
- communications
- occupational satisfaction even at the cost of efficiency
-
-
-

(Indications)

3) Knowing that we must strive towards a new general understanding of our global interdependence and limitations if we are to have a society that does not destroy itself and us, on the basis of reexamination of individual-collective relationships, we should analyse socio-political concepts and structures, religious percevings, social institutions, social changes which try, do not try to answer to human needs in the needs priorities as hypotised in 1)b.

(Indications)

Also evolutionary situations which should be encourage in the equilibrium environment +facilities +social relations for man should be thought of.

(Indications)

The importance of social communication and of education should be studied.

(Indications)

ROME SPECIAL CONFERENCE ON FUTURES RESEARCH - 1973

Memorandum 3

AIMS OF THE CONFERENCE

- 1) Education towards the future of the world, of the same participating group of futurists and of people whose activity has an impact on the future, in the sense of educating to act for the future. For this purpose, the group as a whole will attempt to reach indications for the future, indications which will be further developed in the course of the year following the Conference and which will act as roots to make a common humanistic future a possibility for all men.
- 2) To analyse the interests in the problem of the future in Italy on the part of politicians, industrial managers, communicators, the public in general and additional thrust towards such awareness.

(SHORT HISTORY)

In October we sent out Memorandum n° 2 with the indications of lines being followed in the development of the programme (lines which in their turn emerged from suggestions from a more restricted group of people) with the request for further suggestions on certain points. On the basis of certain reactions and suggestions which have arrived in considerable numbers, we will formulate the basic programme which will

remain such in its fundamental lines, but which can be elaborated where necessary, especially where work groups are concerned, on the basis of the indications which emerge.

The participants in the Conference, who work in groups, will be put in touch with one another through the Secretary of the Conference on the basis of the interests expressed by themselves in their letters of reply; their participation in specific groups will be decided in this way. However the participants may, of course, express a wish to join an alternative group. In the next Memorandum, considering the action orientation of the Conference as a whole, and presuming that all important actions must be the result of group thinking, several of the possible courses of action will become clearly apparent and at the moment we ask the participants in the Conference to provide some indication of action courses which could be discussed at the meeting itself and which could emerge from the Conference, at least as alternatives.

TENTATIVE PROGRAMME

- I. Introduction to underline the aims of the Conference: man must try to explore himself, his aims and his needs in as far and perhaps to a greater extent than he tries to discover the world he wants to change, this is the guideline of the Conference which must be confirmed during the work and after the Conference in order to reach concrete indications of action which could also emerge as a conclusion of the meetings.

Theme: what point has man reached in his process of humanization? Where is man heading in this process? (a paper will be prepared and sent to the participants in the Conference before the Conference itself and it will, therefore, only be presented during the Conference).

II. Critical review by an expert:

- A) Aim: to provide a solid basis for the humanizing of man, through the awareness within the basis of the consequences and effects of actual situations on man himself and indicating the major problems which then emerge.
- B) Characteristics
- a global approach of the entire critical review to the world system based on a high degree of interdependence of the variables; a global system which along the main lines is indicated by the specialists' papers.
 - Consideration of the system's structure rather than of the system's state.
 - Consideration of the non linearity of relationships between variables, even those indicated by the specialists' papers.
 - Projective approach of the critical review to approximately 80 years (meaning the life-span of a man born today, within which will develop all the hypothesis of the panel and groups).

C) Basis

The contributions of the specialists will constitute the support of the critical review and will not be read, nor presented at the meeting, but merely indicated; their characteristics are:

- global approach
- approach to about 80 years
- problematic approach
- starting from the latest ideas of the authors.

The basic themes of the critical review constitute the main problematic lines within which man moves and within which the process of humanizing is taking place; they are certainly not the only ones, but they are indicative for the choice which will determine his future as a man.

Contributions from Specialists.

- 1) World economic development, contrasts, inequality and political interference (prepared by an economist).
 - 2) Attitudes and criticism facing the problems which have arisen during the last few years concerning the relationship between population and natural resources. (prepared by a demographer).
 - 3) Pollution, preservation and the shape of the environment. (prepared by an ecologist).
 - 4) History of the impact of technics evolution on the development of society. (prepared by a specialist in this field).
 - 5) Is the social model of development in East and West necessary and still valid within certain limits for the countries of the South? (prepared by a specialist in this field).
 - 6) Assessing the possibilities and usefulness of modelling in making policies for the world system. (prepared by a study group).
- D) From the critical review the problems which the panel will develop must emerge; they refer to:
- 1) The need of man for his full realization and development in addition to mere survival (human needs).

- 2) The need of man for others for his survival (new society).
- 3) The need of man to be aware of his impact on technology (supportive technologies).

III. PANEL

On the indications emerging from the critical review, the panelists become aware of problems which from this moment we have tried to hypothesize on the basis of suggestions already received, and others which we hope to receive and which will be verified during the conference. It is an iterative process before the meeting between the participants of various groups and the panel and viceversa during the meeting.

1. Man and society, the human needs,, social needs, "tension for and against symbiosis".
 - a) The need to survive; the growth of polarized conflict between the East, West and South, between the individual and groups etc.; due to the growth of scientific and technological development and man's consequent incapacity to face it;
 - b) the possibility and reality of relationship between the need for food etc. and the need to communicate, to love etc. (one panelist).
 - c) Towards "the harmony man-natural context, man among men" (social context) and awareness of man.
 - d) Towards a comprehension of society in which system is due to the natural inter-relationship of the component parts (one panelist).
2. Towards "the generation of configurations of the quality of life" different between themselves, based on biological, psychological and spiritual elements which, however, may give the possibility of different models of life, and therefore different needs and different societies "positive utopias that supersede the existing society but that are also based upon a number of objective possibilities". (one panelist).

3. We are approaching a great transformation in the evolution of man.
 - a) In this "transformation all men must take part". from this point of view they must attend to their needs, to their development, to the quality of life which such* needs define (at biological, psychological and spiritual levels).
 - b) Environmental-human need relationship and consequent choices (one panelist).
4. Possible alternatives to the East and West social models based on the social model of the South, and possibility of common elements and recognition of varying rules and functions. (one panelist).
5. Man must devote his attention to the aims towards which to direct science and technology; "the impact of man on technology".
 - a) As an alternative to the existing technologies: old technology reformed, intermediate technologies, revolutionary new technologies, new technological systems. (in general).
 - b) Social technology: possibilities, dangers, ties to social theories. (one panelist).

IV. GROUPS

Which discuss solutions to problems presented by the panel and hypothesized during the course of the preparatory work. One can presume that each participant will prepare his own paper before the conference with attempts at analysis but above all containing proposed solutions. Each participant in each group will receive a copy of the papers of the other participant in the group before the meeting, plus an abstract of the papers pertaining to other groups. The groups will be linked to the panel during the preparatory period and possibly also to the panel during the conference.

1. The group linked to point I of the panel: man and society, human and social needs, "tension towards and against

symbiosis";

on the theme: personal growth as an alternative to economic growth" in which the need for food etc., the needs for communications etc. will receive fulfilment; presentation of personality sketches as grown persons.

2. Group linked to point 1 of the panel: man and society, human and social needs, "tension for and against symbiosis";

on the theme: increase of interdependence between members of society through "their membership of many large institutions", and the necessity of augmenting, on the one hand, the capacity to reply to the "demands which these institutions make of them" (loyalty, responsibility, mutual thrust, critical and autocritical capacity) and therefore education; on the other hand, the necessity for institutions capable of acting as intermediaries between man and society.

3. Group linked to point 2 of the panel: towards the generation of configurations of various qualities of life different among themselves, based on biological, psychological and spiritual elements which, however, allow the possibility of various types of life, therefore, varying needs and varying societies, "positive-utopia";

on the theme: meta-scenario of patterns of varying qualities of life from various points of view (described by various temporal stages) and the construction of patterns during the conference based not only on what is possible but also on what one wants.

Possibility of models emerging from artistic experiences as future indicators (if interest should arise a group may be foreseen).

- 4.5.6. Groups linked to point 3 of the panel: we are leading towards an important transformation in the evolution of man.

On the theme: participation of all men in the transformation, various possibilities and methods of participating and various limitations, awareness of differences, awareness of similarities.

After this common preliminary stage, dealt with mainly during the preparatory phase and merely presented during the meeting, the groups will split up into:

- a) Participation for physical and ecological survival (group 4).

b) Participants for the realization of:

- communications (group 5)
- religion (group 6)

7. Group linked to point 4 of the panel: alternative possibilities to the social model of the East and West from the South. (proposals from the South).

On the theme: presentation of alternative models and the possibility of common elements in recognizing varying roles and functions.

8. Group linked to point 5 of the panel: man must devote his attention to the aims towards which he directs science and technology: the impact of man on technology;

on the theme: blueprint for a new technology: old technology reformed, intermediate technologies, revolutionary new technologies, new technological systems (in detail).

N.B. The sentences between inverted commas indicate the words expressed in some suggestions received.

IRADES

Istituto Ricerche Applicate Documentazione e Studi

Via Paisiello, 6 - 00198 - ph. 866.346/7/8/9

ROME SPECIAL CONFERENCE ON FUTURES RESEARCH 1973

HUMAN NEEDS - NEW SOCIETIES - SUPPORTIVE TECHNOLOGIES

MEMORANDUM 4

Summary

Introduction

- I. Conference Structure
 - II. Aims
 - III. Brief History
 - IV. Programme and Contents
 - V. Probable Procedure
 - VI. Preparatory Phases
-

March 1973

INTRODUCTION

This present Memorandum 4 presents the definitive programme of the Rome 1973 Conference in its structure, contents, development and preparatory phases for the purpose of helping participants to adapt their contributions as suitably as possible.

Almost all the participants are already in contact with the organisation of the Conference, and they have had the opportunity to consider to some extent the possibility of their individual scientific contribution and their purposeful participation in the groups. This document, which describes the framework of the Conference in clearer and more synthetic terms, is the result of the participants' suggestions, like all the preparatory work of the Conference, as well as the discussion held during the meeting of the Scientific Committee on March 1.

From the suggestions put forth it was seen that this Conference should constitute the first stage of a whole new area of futures studies directed toward "human development and forecasting". From now on, every participant should commit himself - both on the scientific level and in view of man's orientation toward the future - to the work of the Conference and the development of the themes which have emerged during the preparatory work.

...

I. CONFERENCE STRUCTUREMembers of the Scientific Council:

Prof. ALBERONI, Francesco	(Italy)
Dr. BESTUZHEV-LADA, Igor	(U. S. S. R.)
Dr. CAZZANIGA, Vincenzo	(Italy)
Dr. CLARKE, Robin	(UNESCO)
Prof. DATOR, James	(Hawaii - U.S.A.)
Dr. DELORS, Jacques	(France)
Dr. FERRARC, Pietro	(Italy)
Prof. GABOR, Denis	(England)
Prof. GALTUNG, Joan	(Norway)
Dr. INGELSTAM, Lars	(Sweden)
Prof. JUNGK, Robert	(Austria)
Prof. MARCHOVICH, Mihailo	(Yugoslavia)
Dr. MASINI, Eleonora	(Italy)
Prof. McHALE, John	(U.S.A.)
Dr. MENKE-GLUKERT, Peter	(West Germany)
Prof. NEBBIA, Giorgio	(Italy)
Prof. PACE, Pietro	(Italy)
Dr. PECCEI, Aurelio	(Italy)
Prof. PRINI, Pietro	(Italy)
Mr. ROSSELLINI, Roberto	(Italy)
Prof. SELAN, Valerio	(Italy)
Dr. STEENBERGEN van BART	(Holland)

....

Members of the Scientific Council: (Cont.)

Dr.	STRZELECKI, Jan	(Poland)
Dr.	SULC, Ota	(Czechoslovakia)
Mr.	WELLESLEY-WESLEY, James	(England)

Members of the Scientific Committee:

Prof. ALBERONI, Francesco
Dr. DELORS, Jacques
Dr. FERRARO, Pietro
Prof. GABOR, Denis
Prof. JUNGK, Robert
Dr. MASINI, Eleonora
Dr. MENKE-GLUKERT, Peter
Prof. NEBBIA, Giorgio
Prof. PACE, Pietro
Dr. PECCEI, Aurelio
Prof. SELAN, Valerio
Mr. WELLESLEY-WESLEY, James

Members of the IRADES Executive Committee:

- Dr. CAGIANO, Raimondo
- Dr. MARIN, Maurizio
- Dr. MASINI, Eleonora
- Prof. PACE, Pietro
- Prof. RAGAZZINI, Fernando
- Dr. SILANO, Carmine
- Dr. TAVASSI, Maria Teresa
- Dr. VIRGILIO, Carlo

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II. AIMS

- 1) Further education towards the future for the group of futurists and those other persons who have a certain impact on the future through their scientific and operational activities by promoting man-centred futures.
- 2) Towards this goal, the group, acting together, will seek to formulate indications which can be developed during the course of the year following the Conference, such indications being capable of instituting the basis of a truly humanistic future common to all men.
- 3) Promoting interest in the problems of the future in Italy among politicians, industrial leaders, educators, communications officials, programmers and the public in general.

III. BRIEF HISTORY

In October we sent out Memorandum No. 2, which described the general guidelines of the programme (which had been developed from suggestions offered by a restricted group of persons), and asked for further suggestions on its various points. On the basis of the reactions and suggestions returned to us, we formulated a programme plan in Memorandum No. 3, which was circulated among those people we had previously contacted as well as those already interested and others whom we wished to interest.

Memorandum 3 likewise brought forth a number of replies and indications, on the basis of which we are formulating the present programme. It is therefore the result, as far as possible, of all the predominant requirements of expected participants.

Moreover, during the past two months, we have asked for the basic papers, solicited members for the panel, and begun to organise the "groups" - insofar as we have been able - consisting of individuals who have specified their interests and the contributions they intend to make. Furthermore, we have requested the group members to submit their papers, pointing out that they must be ready within a stated period of time (see page 22) so that they can be circulated before the Conference opens.

...

IV. PROGRAMME AND CONTENTS

A) Opening of the Conference by the Presidential Committee.

Introduction

At what point today has man arrived in his process of humanisation?

Where is this process leading him?

This introduction must confirm the theme of the Conference: Man must try to discover himself, his aims and needs, inasfar as, and perhaps to a greater extent than, he tries to discover the world he wants to change. (1)

B) Guidelines of the Conference.

A presentation of the guidelines and purpose of the Conference, and a description of the procedures to be followed.

C) A critical review prepared by Prof. John McHale, of the Center for Integrative Studies, State University of New York, Binghamton.,

(1) Last page of The Limits to Growth by Donella Meadows, Dennis L. Meadows, Jørgen Randers and William M. Behrens II. (Universe Books, New York, 1972).

- a) Giving the background of problems comprising the situation in which man finds himself today, within which he is developing and in which he must find a new system of values for his continuing survival and possibilities of fulfilment.
- b) This background of problems emerges from various basic themes prepared by specialists who express their personal opinions as to how they confront the respective issues.

Basic themes for the critical review (contributions from specialists).

- 1) World economic development, contrasts, political inequality and interference (M. Maurice Guernier).
- 2) Attitudes and criticism facing the problems which have arisen during the last few years concerning the relationship between population and natural resources (Prof. Josué De Castro).
- 3) Natural resources, preservation and the shape of the environment (Prof. Giorgio Nebbia).
- 4) History of the impact of technics evolution on the development of society (Prof. Lewis Mumford).
- 5) Within what limits are the Eastern and Western social development models essential and still valid for countries of the South? (Prof. James Dator).
- 6) Assessing the possibilities and usefulness of modelling in making policies for the world system (Study group of the Science Policy Research Unit of Sussex University).

.....

The problems to be developed by the panel will emerge from the critical review. They will relate to the necessity of finding "a new system of values" and a "new logic of human interaction which can produce a new methodology of knowledge" in terms of the man-society-technology relationships.

N. B.- Abstracts of the basic papers will be distributed before the Conference.

D) Panel

Drawing on the work already done, on the indications and stimuli generated among themselves and the other participants (work groups, etc.), as well as on indications set forth by the critical reviewer, the six panellists will develop the themes of the Conference, alert to the new reality of interdependencies with which logic must come to terms.

1) Man and society: human needs and social needs, "tension towards and against symbiosis", the need to survive, causes of the increase in conflict as polarised between the individual and the group, etc.; man's difficulty in facing such conflicting demands, the relationship between food needs, etc. communication needs, etc.

(Prof. William Simon)

2) Man and society: human needs and social needs, towards "harmony between man and his natural context and between man and men", and towards an understanding of the society

....

in which the system is determined by mutual interdependencies.

Dr. Jan Strzelecki

- 3) Towards "the generation of quality-of-life configurations": various life models, various needs, various societies.

Prof. Magoroh Marujama

- 4) We are moving towards the need for a great transformation in man's evolution; in this process all people must take part, to determine their own needs and to develop their own fulfilment.

IRADES

- 5) Alternatives to the Eastern and Western social models as offered by the countries of the South: common elements, different rules, different functions.

Prof. M. S. Iyengar

- 6) Man's impact on technology, alternatives to existing technologies: old technologies reformed, intermediate technologies, innovative technologies.

Prof. E. F. Schumacher

N. B.- The papers of the panel will be sent to the participants before the Conference.

....

E) Groups

a) Content.

The groups will discuss mainly solutions to the problems presented by the panel but based on the studies and exchanges carried out during the preparatory stages of the Conference. They will therefore be linked to the panel on the themes constituting the connective issues, within which the participants will strive towards an active search for a new consciousness and logic in the solution of the themes proposed.

It is pointed out that every participant may approach any theme from the standpoint he prefers: cultural, social, political, etc.

The analysis of each theme is to be carried out during the preparation of the Conference and therefore can be included in the papers, but mainly "questions" and hypotheses of solutions will be brought to the group discussions at the Conference.

b) Plan of the work method.

The work of the groups is partly carried out in the preparatory phase: preparation of a paper and an abstract; possible contacts among the participants, or at least between the moderator and the participants; distribution and close examination of the papers by the members of a given group before the Conference, also of the abstracts by all the

...

participants prior to the Conference, so that every participant is aware of the work being done by the members of all the other groups. This constitutes the commitment of each participant to the Conference.

Thus, the preparatory work is to be completed by the group discussions during the Conference. We are preparing a series of possibilities to ensure cross-fertilisation among all the participants both by connecting the groups with the plenary body and establishing affiliations among the groups themselves.

Each group will have a moderator, an animator and a secretary (see page 20).

1st Group: Alternative concepts of human development, including personal development as a complement or alternative to economic development: presentation of images and conceptualisations of persons whose development depends not only on food needs, etc. but also on communication, relationships, etc.

2nd Group: The need for man to accept responsibility for what is required of him by social institutions, and the need for institutions to become true facilitators in the man society interaction.

....

- 3rd Group: Meta-scenario of alternative quality-of-life models, new societies based not only on the feasible but also on the desirable.
- 4th Group: Art as an indicator of the future and as a means for the development of man's creativity.
- 5th, 6th,
7th Groups: The participation of all people in man's evolutionary transformation: the emergence of diversities and similarities (to be prepared jointly, but developed separately, in the final months preceding the Conference and during the Conference).
- 5th Group: The participation of all people in physical and ecological survival.
- 6th Group: The participation of all people towards their self-realisation through communication: the present state, potential advantages and disadvantages of the 'holistic' approach in the study of systems and the development of communications facilities.
- 7th Group: Participation of all people in human development, understood as the integral development of man on the individual and societal level; religion as a human need and as an integrative factor in human relations; other possibilities of integration.

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8th Group: The presentation of alternative social models by countries of the South and the possibilities of common elements with diverse roles and diverse functions.

9th Group: Blueprint for a new technology: old technologies revised, intermediate technologies, innovative technologies, new technological systems, communications technologies.

Structured groups deriving from the request of participants (evening groups):

- 1) The possibilities and utility of global models;
- 2) Sensitivity group: intrapersonal communication as a way to a more intensive interpersonal communication.

V. PROBABLE PROCEDURE25 September - Tuesday

18.00 Opening of the Conference and
Introduction

26 September - Wednesday

09.00 Menke Glukert presiding: introduction to the work
09.15 Guidelines of the Conference
09.30 Critical review: J. McHale
10.30 Coffee break
10.45 Panel session: president: Peccei
Participants: Marujama, Simon, Iyegard, IRADES,
Strzelecki, Schumacher.
12.00 Discussion
13.00 Lunch
16.00 Working Groups: constitution and method of work
17.30 Coffee break
17.45 Working groups: session
19.30 } Dinner
20.00 }
21.00 Free evening (non-structured) (*)

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30 September - Sunday

09.00 presiding: Meeting of Conference; everyone to discuss future work in further detail

11.00 Closing ceremony

13.00 Farewell.

(*) The meetings, to be known as "structural meetings", which may wish to benefit from the organisational and communications facilities at the Conference, can be held on the evenings of the 27th (Thursday) and 28th (Friday). The need for such meetings may become apparent before or during the Conference on a wide range of interests of the groups taking part in the Conference (i.e. politics, science, organisations, etc.). Such initiatives could result in meetings of, for example, the Continuing Committee, a sensitivity group, discussions of global models, etc. Whatever lies beyond the framework of this programme cannot be included among the organisational duties of the Executive Committee.

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VI. PREPARATORY PHASES AND PROCEDURE OF THE CONFERENCE

PHASES	PROCEDURES	MATERIAL
<u>Introductory phase of formulating the program</u> (July-October 1972)	1) Contact with 5 persons 2) " " 25 " 3) " " 40 "	Letters Memoranda 1 and 2 Memorandum 3
<u>Long-range preparations for the program.</u> (October 1972-May 1973)	1) Introduction Request to one person by 30 August 2) Basic papers (a) Submission requested by early April 3) Critical review (b) To be prepared during May and June 4) Panel (c) Submission requested by May	a paper (length wanted) - a paper (length wanted) - an abstract (length wanted, in English) Tape recorded during the Conference An abstract (one page, in English)

...

PHASES	PROCEDURES	MATERIAL
<p>5) Groups (d)</p>	<p>Formation and contacts during February</p> <p>Submission of paper by the end of April</p> <p>All members of each group to distribute (via the Secretariat) their papers in integral form to all other members of their group and, in abstract form, to all members of the other groups</p> <p>in May</p>	<p>Papers (not longer than 12 pages)</p> <p>Abstracts (one page, in English)</p> <p>at least in outline</p>
<p>6) Conclusions</p>		<p>Proofs</p>
<p><u>Proceedings of the Conference</u></p> <p>1) Introduction</p> <p>2) Basic documents</p>	<p>Language used: English (simultaneous translations in plenary sessions in French, Italian, Russian)</p>	<p>Distribution of papers (see synthesis)</p>

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PHASES	PROCEDURES	MATERIAL
3) Critical review	Speaker	Tape recording
4) Panel	Moderator and 6 participants	Distribution of papers (see synthesis)
5) Groups	<p>12-15 members (inter-cultural, inter-disciplinary)</p> <p>A <u>moderator</u> who</p> <ul style="list-style-type: none"> - holds the reins - stimulates exchanges before and during the Conference - takes charge of compiling reports and operational indications <p>A <u>practitioner</u> who maintains contact with the public world in relation to the field under observation</p> <p>A <u>secretary</u> to draft reports, keeps in contact with the delegates and the organisation in general</p>	<p>preceding papers and tape recording</p> <p style="text-align: right;">.....</p>

Synthesis of the documents distributed

A) Special documentation distributed before the Conference:

- a) Papers among one group
- b) Abstracts to the members of the other groups
- c) Abstracts of basic and panel papers

B) General documentation distributed during the Conference:

- a) Basic papers
- b) Panel papers

N.B.- The papers will be part of the proceedings of the Conference.

Please note that the final date for the submission of papers from group members is 30th April:

- (a) The papers, basic for the critical review, must indicate some of the principal problems of the sphere within which man exists and within which the process of humanisation occurs. These papers are to be prepared by specialists in the various field.
- (b) Critical review: referring to the problems raised in the basic papers, an expert will estimate the consequences of such problems for man and his development.
- (c) On the basis of the work done, resulting from the stimuli generated between themselves and from among the other

....

participants (study groups, etc.), including the indications given in the critical review; the panellists will attempt to define the fundamental points of the Conference in relation to man.

- (d) The groups will discuss, primarily, solutions to the problems presented by the panel but founded on the study and exchanges carried out during the course of the preparations for the Conference.

VII. ORGANISATIONAL NOTES

- **Place:** The Conference will be held near Frascati, 20 kilometres from Rome.
- **Secretariat:** The secretariat for the Conference is IRADES (Istituto Ricerche Applicate Documentazione e Studi), Via G. Paisiello 6, 00198 Rome, Italy. Requests for any information should be directed to this address.
- **Services:** During the Conference, various accommodations will be available to the participants, such as: foreign exchange, mailing, telephone, telegraph, teletype facilities, etc.
- **Travel:** Participants can make their round-trip travel arrangements to Rome and return through Thos. Cook and Son Travel Agency, which is the official travel bureau for the Conference.
- **Fees:** Registration fee: \$40.00 (which will include copies of the Conference documents), payable not later than May 30.
Living expenses: \$100.00 for accommodations arranged by the Conference organisation, including meals, a single room or double room with bath or shower, transportation from the airport to the Conference location and return.

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Accompanying relatives:

The participants are urged to notify us as soon as possible of any relatives who will be accompanying them to the Conference. The organisers will make every effort to accommodate them at the site of the Conference.

Languages:

English will be the official language. During the plenary sessions, simultaneous translations will be provided in Italian, French and Russian. In the group sessions will be consecutive Italian-French translations.

FURTHER PERSONAL RECOMMENDATIONS *

Introduction

- I. Conference structure
- II. Aims
- III. Brief history
- IV. Programme and contents
- V. Probable procedure
- VI. Preparatory phases
- VII. Organisational notes

* We ask all participants kindly to send us their recommendations on the present stage of the organisation of the Conference.

REGISTRATION FORM

Name _____

Address: Street _____

City _____

Country _____

Telephone No. _____

I herewith confirm my intention to attend the Rome 1973 Special World Futures Conference and enclose my cheque or bank draft in favour of IRADES' account number 17745, Agency N° 23, Credito Italiano, Rome, Italy, in the amount of \$40.00, to cover the registration fee, and the additional amount of \$100.00 to cover my living expenses.

Signed _____

N.B.- Those who prefer to select their own living quarters apart from those offered by the Conference organisation should send only the \$40.00 registration fee, and may apply to Cooks Travel Agency for separate accomodation.

Istituto Ricerche Applicate Documentazione e Studi

Via Paisiello, 6 - 00198 Rome - Tel. 866.346/7/8

ROME SPECIAL CONFERENCE ON FUTURES RESEARCH 1973

HUMAN NEEDS - NEW SOCIETIES - SUPPORTIVE TECHNOLOGIES

MEMORANDUM 5

SUMMARY

Introduction

I Groups

II The groups working method

III Evening groups

April 1973

(concerning mainly the organisation of the groups)

INTRODUCTION

We have sent out Memorandum 4, describing the definitive programme of the Rome 1973 Conference, to all those participating in the meeting. This document also serves as an invitation to attend the Conference.

We are already receiving letters of acceptance as well as papers and abstracts. We are hopeful that this stage of the preparations will be completed as soon as possible, without any undue delay.

We shall begin circulating the papers among the group members during the month of May, also abstracts of the six papers written by the specialista and those contributed by the panellists. We are in contact with all the participants, some of whom are now in direct contact with the other members of their own groups. We should like to see these intragroup contacts expand so that the cross-fertilisation in the preparatory phase of the Conference can begin at once, while at the Conference sessions -- since the group members will have already established a mutual acquaintanceship and familiarised themselves with the material under study -- the concrete proposals set forth in the papers can be readily submitted for debate. Again we point out that the papers will include both the analytical phase and the authors' concrete proposals, which must at least define the problem under study.

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I. GROUPS

The following is an indication of the groups, the themes of which remain unchanged except for a few modifications deriving from recent suggestions together with a listing of the initial members of the various groups, whose participation is already assured and, where possible, the names of those who, as of April 30, have agreed to act as moderators and animators. Meanwhile, we are still corresponding with numerous other interested persons. Meanwhile, we ask the forbearance of those participants attending the Conference whose names, are not yet included in this document.

Group 1. Alternative concepts of human development, including personal development as a complement or alternative to economic development: presentation of images and conceptualisations of persons whose development depends not only on food needs, etc. but also on needs for communication, relationships, etc.

Participants:

Alberoni, sociologist	(Italy)
Bize, psychiatrist - creiologist	(France)
Delors, general secretary for "formation permanente"	(France)
Y. Dror, political scientist	(Israel)
Landau, psychiatrist	(Israel)
Kaplan, leisure	(U.S.A.)
Lesse, psychiatrist	(U.S.A.)
Nakarada, sociologist	(Yugoslavia)
Puri, psychiatrist	(India)

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Moderator:

Animator: Lesse

- Group 2. The need for man to accept responsibility for what is required of him by social institutions, and the need for those institutions to become true facilitators in the man-society interaction.

Participants:

Botez, mathematician	(Romania)
Elboim/Dror, educationalist	(Israel)
Gozzer, educationalist	(Italy)
Judge, sociologist	(Belgium)
Marc, federalist	(France)

Moderator:

Animator: Elboim/Dror

- Group 3. Meta-scenario of alternative quality-of-life models, new societies based not only on the feasible but also on the desirable.

Participants:

Barel, sociologist	(France)
Dator, political scientist	(Hawaii)
Gabor, physicist	(England)
Sulc, sociologist	(Czechoslovakia)
Varga, sociologist	(Romania)

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Moderator: Gabor

Animator:

Group 4. Art as an indicator of the future and as a means for the development of man's creativity:

Participants:

Alisjhbama, philosopher (Indonesia)

Rossellini, film director (Italia)

Virgilio, sociologist (Italia)

Moderator:

Animator:

Groups 5, 6, 7. The participation of all people in man's evolutionary transformation; the emergence of diversities and their symbiosis (to be prepared jointly by the three groups which, however, will work separately in the final months prior to and during the Conference).

Group 5. The participation of all people in physical and ecological survival.

Participants:

Calhoun, Behavioral Systems (U.S.A.)

Platt, biologist (U.S.A.)

Wakefield, Plans and Process analyst (U.S.A.)

Christakis, Associate Academy for Contemporary
Problems

Moderator: Platt

Animator:

Group 6. The participation of all people towards their self-realisation through communication: the present state, potential advantages and disadvantages of the "holistic" approach in the study of systems and the development of communications facilities.

Participants:

Ceccato, cyberneticist	(Italy)
Gerardin, futures research Director Thomson CSF	(France)
Linstone, editor of Technological Forecasting and Social Change	(U.S.A.)

Moderator: Linstone

Animator: Ceccato

Group 7. The participation of all people in human development, understood as the integral development of man on the individual and societal level; religion as a human need and integrative factor in human relations; other possibilities of integration.

Participants:

Bahm, philosopher	(U.S.A.)
E. Boulding, anthropologist	(U.S.A.)
Limberty, sociologist	(Italy)
Wellesley-Wesley	(England)
Zadra, sociologist	(Italy)

Moderator:

Animator: Zadra

Group 8. The presentation of alternative social models by countries of the South and possibilities of common elements with diverse roles and diverse functions.

Participants:

van Dam, corporate planner	(Argentina)
Maruyama, anthropologist	(U.S.A.)
Thapar, political scientist	(India)

Moderator:

Animator: Thapar

Group 9. Blueprint for a new technology: old technologies revised, intermediate technologies, innovative technologies, new technological systems, communications technologies.

Participants:

Colombo, director of Strategic Development, Montedison	(Italy)
De Rita, sociologist	(Italy)
Jungk, author	(Austria)
Ingelstam, mathematician	(Sweden)
Nadal, political scientist	(Mexico)
Porter, social communications specialist	(Canada)
Sethi, psychiatrist	(India)
Sicinski, sociologist	(Poland)
Schumacher, soft technology	(England)

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Moderator: Jungk

Animator:

NOTE: We ask participants who have not yet indicated which groups they intend to join to give preference to those with the lesser number of members.

II. THE GROUPS' WORKING METHOD

As stated in Memorandum 4, the group work is to be partially carried out in the preparatory phase, including the writing of a paper and abstract by each participant and contacts where possible among the members of the different groups, or at least contacts between the moderator and his group members. During the Conference, the groups will benefit from the stimulation of the critical review and the panel discussions. They will contribute the results of their work in the plenary sessions where there will be a constant circulation of ideas, aiming towards the formulation of common proposals.

- 1) Each group will consist of a moderator, an animator and approximately 10 other participants, plus a secretary (as from Memo 4, page 20).
- 2) Before the Conference opens, each participant will have read the papers of all the other members of his group and the abstracts of all the participants in all the other groups of the Conference.
- 3) The groups will present the results of their initial work in the form of questions put to the other groups in the plenary session

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to be held on Sept. 27. A delegate from each group will present his group's questions.

- 4) Each group will present the results of its work through a spokesman at the plenary session of September 28.
- 5) Each group will present its proposals through a spokesman at the September 29 plenary session.
- 6) Each group may consider appointing one or two of its members to take part in other groups.
- 7) If the entire group approves, its members may join another group or subdivide.
- 8) The composition of each group will remain homogeneous until its work is finished, except in cases where a personal contribution is important to specific aspects of other group debates.
These shifts, however exceptional, must nevertheless be avoided during the first two days.
- 9) Generally participation in more than one group at a time can be foreseen only as between the daytime and evening groups.
- 10) Results achieved by each group will figure in the proceedings of the conference only if it contributes to a conclusive document to be drawn up at the end of the sessions or developed during the course of the work.
- 11) English will be the official language used at the Conference.
In each group, however, follow-up translations will be given in one or two other languages, depending upon the composition of the group and the organisation's possibilities.

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III. EVENING GROUPS (added sessions requested by various participants and held in the evenings):

1. The possibilities and utility of global models

Participants: SPRU Group of Sussex University (England)
Schwarz, nuclear physicist (Sweden)

2. Sensitivity group

Moderator: E. Landau, psychiatrist (Israel)

3. Policy-making for the future

Moderator: Y. Dror, political scientist (Israel)

NOTE 1: Since the groups plan is still provisional, participants are requested to submit modifications and suggestions concerning their qualifications and any other details. Such communications must reach us no later than June 15.

NOTE 2: We sincerely regret the delay of probably a month in the dates indicated in Memo 4 for sending the papers to participants, due to postal strike in Italy.

IRADES

Istituto Ricerche Applicate Documentazione e Studi
via Paisiello 6, 00198 Roma, tel. 866.346

ROME SPECIAL CONFERENCE ON FUTURES RESEARCH 1973

HUMAN NEEDS – NEW SOCIETIES – SUPPORTIVE TECHNOLOGIES

Memorandum 6

CONTENTS

Introduction

I Programme changes

II Groups

III Working methods in the groups

IV Conference procedures

July 1973

INTRODUCTION

We are pleased to announce that we have registered the maximum number of Conference participants (120) agreed upon by the organisers; conversely, we deeply regret that we are unable to accept any more of the numerous applications for attendance arriving daily. But if the work of the Conference is to yield gainful rewards in the exchanges of ideas and in arriving at effective indications for work to be carried out after the Conference, we must strictly abide by our original intention of limiting the attendance.

We have mailed out the definitive programme to all participants, the abstracts of the first papers received and the integral papers to those participants who have stated which group they wish to join.

Together with the Memorandum, we are distributing the second lot of abstracts and papers; if necessary, there will be a third mailing. All participants are requested to bring all the papers and abstracts with them to the Conference. Those who have not yet sent us their papers are urged to do so as soon as possible.

Many participants have already made contacts among themselves, and we hope that these contacts will continue at a faster pace in the time remaining before the Conference - less than three months - since the results of the Conference and the nature of the work to be carried out in the future depend largely on the cross-fertilization preceding the event.

Toward sensibilising public opinion, especially Italian, to the problems of the future, we have mailed out a number of our descriptive brochures to journalists, politicians, universities and others.

I PROGRAMME CHANGES

Because of difficulties beyond the control of the Organisation of the Conference, the following changes have been made in the programme:

I. Prof. Josué de Castro's report will be substituted (we shall inform

the participants of the name of the person as soon as possible).

- 2) At the plenary session scheduled for September 27th, Prof. Elungu pene Elungu will be substituted as chairman by Dr. T.A. Lambo(Nigeria), Assistant Director General of the World Health Organisation.

II GROUPS

The following describes the composition of each group as of July 1st. Any variants will be announced at the Conference itself.

- GROUP I. Alternative concepts of human development, including personal development as a complement or alternative to economic development: presentation of images and conceptualisations of persons whose development depends not only on food needs, etc. but also on needs for communication, relationships, etc.

PARTICIPANTS

F. ALBERONI, sociologist	(Italy)
R. BIZE, psychiatrist-creiologist	(France)
R.M. CROOSE PARRY, secretary, honorary member of the Teilhard Centre for the Future of Man	(England)
J. DANECKI, sociologist	(Poland)
Y. DROR, political scientist	(Israel)
E. FONTELA, economist	(Switzerland)
R.GORNEY, psychiatrist	(USA)
J. GUERON, CTN Secretary General	(France)
S. GUNAWARDENA, anthropologist	(India)
M. KAPLAN, leisure-time specialist	(USA)
E. LANDAU, psychologist	(Israel)
M. LAZAR, sociologist	(Romania)
S. LESSE, psychiatrist	(USA)

R. NAKARADA, sociologist (Yugoslavia)

S. PURI, human ecologist-biologist (India)

MODERATOR: S. LESSE

ANIMATOR: R. NAKARADA

- GROUP 2. The need for man to accept responsibility for what is required of him by social institutions, and the need for those institutions to become true facilitators in the man-society interaction.

PARTICIPANTS

M. BOTEZ, mathematician (Romania)

R. ELBOIM DROR, expert in education (Israel)

G. GOZZER, expert in education (Italy)

A. JUDGE, sociologist (Belgium)

A. MEIR, environmental design (USA)

Ahmed NIZAM UDDIN, anthropologist (Bangladesh)

S. SCHWARTZ, nuclear physicist (Sweden)

MODERATOR: R. MEIR

ANIMATOR: R. Elboim DROR

- GROUP 3 Meta-scenario of alternative quality-of-life models, new societies, based not only on the feasible but also on the desirable .

PARTICIPANTS

P. APOSTOL, philosopher (Romania)

Y. BAREL, sociologist (France)

J. DELORS, Secretary General of Professional Training and Social Promotion (France)

J. DATOR, political scientist	(USA)
A.M. DECOUFLE', expert in political sciences	(France)
D. GABOR, physicist	(England)
G. GUERON, consultant	(France)
F. LIENEMANN, Plan 2000 Project Director	(West Germany)
R. MENASANCH, Secretary General of the Club de Amigos de la Futurologia	(Spain)
W. PAWLEY, Director of the FAO Policy Analysis Division	(Australia)
G. RATTRAY-TAYLOR, author	(England)
V. SCARDIGLI, sociologist	(France)
A. SORENSEN, President of the Society for Research on Futures	(Denmark)
O. SULC, sociologist	(Czechoslovakia)
V. VARGA, sociologist	(Romania)
D. ZIEGLER, documentarist	(West Germany)

MODERATOR: D. GABOR

ANIMATOR: P. APOSTOL (?)

GROUP 4. Art as indicator of the future and as a means for the development of man's creativity.

PARTICIPANTS

T. ALISJAHABANA, philosopher	(Indonesia)
R. ARNOLD, student in comparative Literature	(Canada)
R. GARAUDY, philosopher	(France)
E. MENNA, art historian	(Italy)
M. SIEBKER, physicist	(Belgium)
C. VIRGILIO, sociologist	(Italy)

MODERATOR: R. GARAUDY

ANIMATOR: T. ALISJAHABANA (?)

GROUPS 5, 6, 7. The participation of all people in man's evolutionary transformation; the emergence of diversities and their symbiosis (to be prepared jointly by the three groups which, however, will work separately in the final months prior to and during the Conference).

GROUP 5 The participation of all people in physical and ecological survival

PARTICIPANTS

S. BRUCKMAN, statistician (Austria)
 J. CALHOUN, expert in behavioural systems (USA)
 A. CHRISTAKIS, Associate of the Academy for Contemporary Problems (USA)
 S. GHABBOUR, of the Department of Natural Resources (Egypt)
 E. GOLSMITH, editor of the Ecologist (England)
 E. MENKE-GLUKERT, ecologist (West German)
 J. PLATT, biologist (USA)
 A. PORTER, ecologist (Canada)
 R. WAKEFIELD, plans and process analyst (USA)
 J. WITT-HANSEN, philosopher (Denmark)

MODERATOR: J. PLATT

ANIMATOR: S. GHABBOUR (?)

GROUP 6 The participation of all people towards their self-realisation through communication: the present state, potential advantages and disadvantages of the "holistic" approach in the study of systems and the development of communications facilities.

PARTICIPANTS

S. CECCATO, cyberneticist (Italy)
 R. CHAPLAIN (England)
 L. GERARDIN, director of futures research Thomson C.S.F. (France)

- T. IDE, President of the Ontario Educational
Communication Authority (Canada)
- C. JONES, The Open University (England)
- K. NDETI, sociologist (Kenya)
- H. LINSTONE, editor, Technological Forecasting and Social
Change (USA)
- M. PIATTELLI-PALMARINI, bio-physicist (France)
- G. STREATFIELD, Executive Secretary, Mankind 2000 (England)
- S. UMPLEBY, researcher in computer-based education
research laboratory (USA)
- J. WARFIELD, senior advisor of Battelle (USA)

MODERATOR: H. LINSTONE

ANIMATOR: S. CECCATO

- GROUP 7. The participation of all people in human development, understood as the integral development of man on the individual and societal level: religion as a human need and integrative factor in human relations; other possibilities of integration.

PARTICIPANTS

- A. BAHM, philosopher (USA)
- E. BOULDING, anthropologist (USA)
- E. CANTORE, philosopher (USA)
- A. CHULLIKAL, sociologist (India)
- S. LIMBERTI, sociologist (Italy)
- RE BETH IBRAHIM (Indonesia)
- J. WELLESLEY-WESLEY (England)
- D. ZADRA, sociologist (Italy)

MODERATOR: E. BOULDING

ANIMATOR: D. ZADRA

- GROUP 8. The presentation of alternative social models by countries of the South and possibilities of common elements with diverse roles and diverse functions.

PARTICIPANTS

A. van DAM, corporate planner	(Argentina)
A. GRAJAL, sociologist	(Venezuela)
F. MARIKASIK	(Indonesia)
M. MARUYAMA, anthropologist	(USA)
MUNZADI DI BABOLE, sociologist	(Zaire)
A. NORDWALL	(USA)
R. ROSSELLINI film director	(Italy)
R. THAPAR, journalist	(India)

MODERATOR: M. MARUYAMA

ANIMATOR: R. THAPAR

- GROUP 9. Blueprint for a new technology: old technologies revised, intermediate technologies, innovative technologies, new technological systems, communications technologies.

PARTICIPANTS

U. COLOMBO, Director of Strategy and Development, Montedison	(Italy)
G. DE RITA, sociologist	(Italy)
R. JUNGK, author	(Austria)
L. INGELSTAM, mathematician	(Sweden)
J. MOULIK, anthropologist	(Australia)
A. NADAL, political science expert	(Mexico)
B. SETHI, psychiatrist	(India)
A. SICINSKI, sociologist	(Poland)
E.F. SCHUMACHER, intermediate technologist	(England)
B. van STEENBERGEN, sociologist	(The Netherlands)

MODERATOR: R. JUNGK

ANIMATOR: L. INGELSTAM (?)

N.B. Participants are asked to forgive any errors made in this list. Such errors will certainly be corrected from the data given in the registration forms.

EVENING GROUPS (requested by participants):

I) The possibilities and utility of global models:

PARTICIPANTS

SPRU Sussex University Group	(England)
J. BRUCKMANN, statistician	(Austria)
B. BRIGHT, Associate Dean, Graduate School of Business, the University of Texas at Austin	(USA)
S. SCHWARTZ, nuclear physicist	(Sweden)
M. ZEMAN, engineer	(Czechoslovakia)

2) Sensitivity Group:

MODERATOR: E. LANDAU, psychologist	(Israel)
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3) Policy-making for the future :

MODERATOR: Y. DROR, political scientist	(Israel)
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4) Human and social determinants:

Moderator: S. LESSE, psychiatrist	(USA)
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III WORKING METHODS IN THE GROUPS (Add to Memorandum 5)

I) Every group will have a moderator, who will be responsible for maintaining direction and coherency in the discussions; an animator to keep the group anchored to reality and concrete necessities; and a secretary to act as liaison with the organisation and draft the reports of the group.

2) Each group will have a translator according to the needs of its members, and every effort will be made to keep the discussions fluent in a single language, possibly English.

IV CONFERENCE PROCEDURES

The papers are more or less of equal length. Of those who have respected the requested 12-page limit, we ask their patience if others have exceeded that limit.

We urge all participants who wish to make changes in their papers to do so before the Conference, and to bring with them a corrected copy for publication in the procedures. The procedures will, in fact, include all the papers, the results of the group discussions during the Conference and the final summing up.

IRADES

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via Paisiello 6, 00198 Roma, tel. 866.346

ROME SPECIAL CONFERENCE ON FUTURES RESEARCH 1973

HUMAN NEEDS – NEW SOCIETIES – SUPPORTIVE TECHNOLOGIES

Memorandum 7

CONTENTS

	Introduction
I	Programme changes
II	Groups
III	Group secretaries
IV	Notes

August 1973

INTRODUCTION

Together with this memorandum, we are sending out the third mailing of abstracts and papers. Again we ask our participants to bring all abstracts and papers to the Conference. Moreover, we are including a document, prepared by the Executive Committee, of "proposals for follow up activities" suggested by participants toward stimulating those attending the Conference to put greater concentration on those concrete indications which can be applied in the immediate future.

We repeat: we must conclude this Conference with viable indications for subsequent action rather than with analyses which may be enormously interesting but bereft of any real impact.

The open public meeting on September 29 has taken on a more concrete character for these same reasons. Participating in this event will be a small group of qualified Italians belonging to various groups (about 10), who will contribute their ideas on various themes discussed at the Conference although having taken no part in the discussions. Apart from this small group, delegates from various other categories will participate -- students, workers, union members and politicians - for an immediate feedback on the more salient points covered by the conferees.

I. PROGRAMME CHANGES

Because of difficulties beyond the control of the Conference organisers, the programme has been modified as follows:

- 1) Owing to the critical emergency caused by the drought in the Sahel, of which we are well aware, Mr. L. S. Senghor, President of the Republic of Senegal, who was scheduled to inaugurate the Conference at the opening session on September 25, will be unable to attend. He will be replaced by Dr. T. A. Lambo, Assistant Director General of the World Health Organisation.

- 2) Two of the six themes of the basic papers to be presented at the critical review -- "Attitudes and criticism facing the problems which have arisen during the last few years concerning the relationship between population and natural resources" and "Natural resources, preservation and the shape of the environment" -- are being prepared by Prof. John McHale, of the Center for Integrative Studies, School of Advanced Technology, who will conduct the critical review.

II. GROUPS

Inevitably, changes have had to be made in the membership of the various groups. The following brings the list of group participants up to date.

- Group 1. Alternative concepts of human development, including personal development as a complement or alternative to economic development: presentation of images and conceptualisations of persons whose development depends not only on food needs, etc. but also on needs for communication, relationships, etc.

PARTICIPANTS

F. ALBERONI, sociologist	Italy
R. BIZE, psychiatrist - creiologist	France
R. M. CROOSE PARRY, Secretary, The Teilhard Center for the Future of Man	England
J. DANECKI, sociologist	Poland
Y. DROR, political scientist	Israel
E. FONTELA, economist	Switzerland
R. GORNEY, psychiatrist	U.S.A.
J. GUERON, Secretary-General, CTN	France
M. KAPLAN, leisure time specialist	U.S.A.
E. LANDAU, psychologist	Israel
M. LAZAR, sociologist	Romania
S. LESSE, psychiatrist	U.S.A.

R. NAKARADA, sociologist	Yugoslavia
S. PURI, human ecologist - biologist	India

MODERATOR: S. LESSE

ANIMATOR: R. NAKARADA

Group 2. The need for man to accept responsibility for what is required of him by social institutions, and the need for those institutions to become true facilitators in the man-society interaction.

PARTICIPANTS

M. BOTEZ, mathematician	Romania
A. BRONWELL, professor of Electrical Engineering	U.S.A.
R. Elboim DROR, expert in education	Israel
G. GOZZER, expert in education	Italy
A. JUDGE, sociologist	Belgium
R. MEIR, environmental design specialist	U.S.A.
C. NWA-CHIL, sociologist	Tanzania
A. NIZZAM UDDIN, anthropologist	Bangladesh
R. ROSSELLINI, film director	Italy
P. SANTARCANGELI, consultant, Fondazione Agnelli	Italy
S. SCHWARTZ, nuclear physicist	Sweden

MODERATOR: R. MEIR

ANIMATOR: R. Elboim DROR

Group 3. Meta-scenario of alternative quality-of-life models, new societies based not only on the feasible but also on the desirable.

Please add

Group 2 - U. GORI, Professor International relations, Italy

PARTICIPANTS

P. APOSTOL, philosopher	Romania
Y. BAREL, sociologist	France
M. BRIGHI, manager	Italy
J. DATOR, political scientist	U.S.A.
B. DE FINETTI, mathematician	Italy
J. DELORS, Secretary General of Professional Training and Social Promotion	France
A. M. DECOUFLE, political scientist	France
A. FERRARI TONIOLO, Secretary, Fondazione U. Bordini	Italy
D. GABOR, physicist	England
G. GUERON, consultant	France
F. LIENEMANN, Project Director, Plan 2000	Germany
R. MENASANCH, Secretary General, Club de Amigos de la Futurologia	Spain
W. PAWLEY, Director, Policy Analysis Division, FAO	Australia
G. RATTRAY-TAYLOR, author	England
V. SCARDIGLI, sociologist	France
A. SORENSEN, President, Society for Research on Future	Denmark
O. SULC, sociologist	Czechoslovakia
V. TONINI, Director, "La Nuova Critica"	Italy
V. VARGA, sociologist	Romania
B. ZIEGLER, documentalist	Germany

MODERATOR: D. GABOR

ANIMATOR: P. APOSTOL

Group 4. Art as indicator of the future and as a means for the development of man's creativity.

PARTICIPANTS

S. ARNOLD, comparative literature	Canada
T. ALISJHABANA, philosopher	Indonesia
M. Cordell McHALE, artist	U.S.A.
Y. FRIEDMAN, architect	France
R. GARAUDY, philosopher	France
E. MENNA, art historian	Italy
M. SIEBKER, physicist	Belgium
C. VIRGILIO, sociologist	Belgium

MODERATOR: R. GARAUDY

ANIMATOR: T. ALISJHABANA

Group 5, 6, 7: The participation of all people in man's evolutionary transformation; the emergence of diversities and their symbiosis (to be prepared jointly by the three groups which, however, will work separately in the final months prior to and during the Conference)?

Group 5: The participation of all people in physical and ecological survival.

PARTICIPANTS

S. BRUCKMAN, statistician	Austria
J. CALHOUN, expert in behavioral systems	U.S.A.
A. CHRISTAKIS, Associate, Academy for Contemporary Problems	U.S.A.
S. GHABBOUR, professor, Department of Natural Resources	Egypt
E. MENKE GLUCKERT, ecologist	Germany
E. GOLDSMITH, Editor, "The Ecologist"	England
A. PECCEI, President, Italconsult	Italy
J. PLATT, biologist	U.S.A.
A. PORTER, industrial engineer	Canada
R. WAKEFIELD, plans and process analyst	U.S.A.
J. WITT HAUSEN, philosopher	Denmark

MODERATOR: J. PLATT

ANIMATOR: S. GHABBOUR

Group 6. The participation of all people towards their self-realisation through communication: the present state, potential advantages and disadvantages of the "holistic" approach in the study of systems and the development of communication facilities.

PARTICIPANTS

S. CECCATO, cyberneticist	Italy
R. CHAPLAIN	England
L. GERARDIN, director of futures research, Thomson CSF	France
T. IDE, President, The Ontario Educational Communication Authority	Canada
A. HARKINS, Associate Professor, University of Minnesota	U.S.A.
C. JONES, The Open University	England
H. LINSTONE, Editor, "Technological Forecasting and Social Change"	U.S.A.
K. NDETI, sociologist	Kenya
M. PIATTELLI-PALMARINI, biophysicist	France
B. St. QUENTIN, President, Teilhard Center for the Future of Man	England
G. STREATFIELD, Executive Secretary, Mankind 2000	England
S. UMPLEBY, researcher, computer-based education research laboratory	U.S.A.
J. WARFIELD, Senior Advisor, Battelle	U.S.A.

MODERATOR: H. LINSTONE

ANIMATOR: S. CECCATO

Group 7. The participation of all people in human development, understood as the integral development of man on the individual and societal level: religion as a human need and integrative factor in human relations; other possibilities of integration.

PARTICIPANTS

A. BAHM, philosopher	U.S.A.
E. BOULDING, anthropologist	U.S.A.
E. CANTORE, philosopher	U.S.A.
A. CHULLIKAL, sociologist	India

J. DALY, sociologist	U.S.A.
S. LIMBERTI, sociologist	Italy
RE BETH IBRAHIM	Indonesia
J. WELLESLEY-WESLEY	England
D. ZADRA, sociologist	Italy

MODERATOR: E. BOULDING

ANIMATOR: D. ZADRA

Group 8. The presentation of alternative social models by countries of the South and possibilities of common elements with diverse roles and diverse functions.

PARTICIPANTS

A. van DAM, corporate planner	Argentina
A. GRAJAL, sociologist	Venezuela
J. GRECO,	Argentina
L. GUNAWARDENA, anthropologist	Ceylon
M. S. IYENGAR, sociologist	India
F. MARIKASIK	Indonesia
M. MARUYAMA, anthropologist	U.S.A.
MUNZADI DI BABOLE, sociologist	Zaire
A. NORDWALL,	U.S.A.
R. THAPAR, journalist	India

MODERATOR: M. MARUYAMA

ANIMATOR: R. THAPAR

Group 9. Blueprint for a new technology: old technologies revised, intermediate technologies, innovative technologies, new technological systems, communications technologies.

PARTICIPANTS

U. COLOMBO, Director of Strategy and Development, Montedison	Italy
G. DE RITA, sociologist	Italy
R. JUNGK, author	Austria

L. INGELSTAM, mathematician	Sweden
A. MOLIK, professor, University of Liubljana	Yugoslavia
J. MOULIK, anthropologist	Australia
A. NADAL, political sciences specialist	Mexico
B. SETHI, psychiatrist	India
R. SICINSKI, sociologist	Poland
E. F. SCHUMACHER, intermediate technology	England
B. van STEENBERGEN, sociologist	The Netherlands

MODERATOR: R. JUNGK

ANIMATOR: L. INGELSTAM

EVENING GROUPS

1. The possibilities and utility of global models.

SPRU Sussex University Group

J. BRUCKMANN, statistician

S. SCHWARTZ, nuclear physicist

M. ZEMAN, engineer

England

Austria

Sweden

Czechoslovakia

2. Sensitivity group

MODERATOR: E. LANDAU, psychologist

Israel

3. Policy-making for the future

MODERATOR: Y. DROR, political scientist

Israel

J. BRIGHT, Associate Dean, Graduate
School of Business,
University of Texas

U.S.A.

H. SCHMELZER, Director, WEMA

Germany

4. Human and social determinants

MODERATOR: S. LESSE, psychiatrist

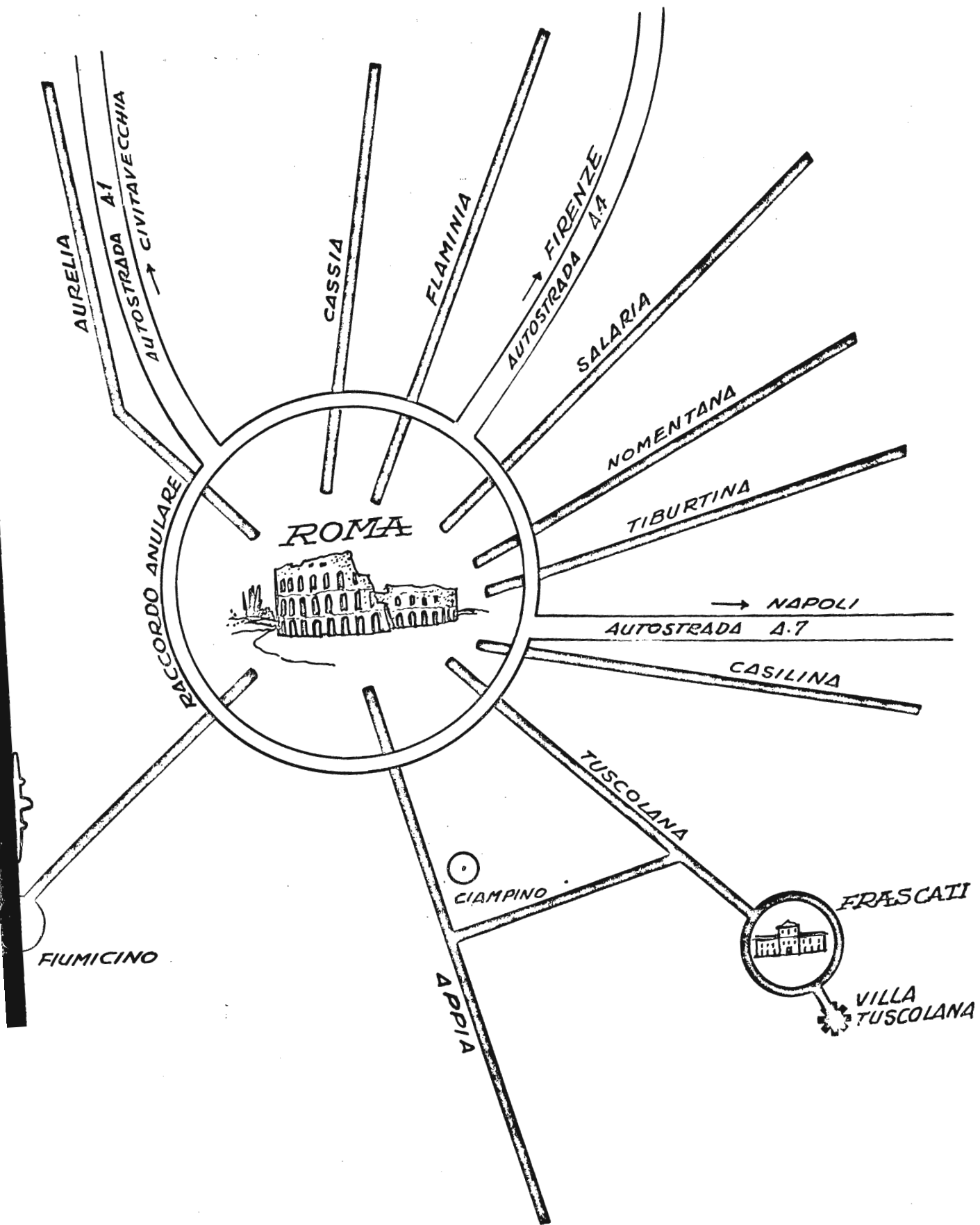
U.S.A.

III. GROUP SECRETARIES

Group 1.	M. Cristina GAJA, IRADES	Italy
Group 2.	Barbara Katherine SCHREINER, Department of Architecture, Kingston Polytechnic, Oxford	England
Group 3.	Louis-Antoine DERNOI, Canadian Ministry of State for Urban Affairs	Canada
Group 4.	Penelope CROSS	England
Group 5.	Antonio DE MARTINO, Società Incentive, Rome	Italy
Group 6.	Anne Jaumin PONSAR, University of Louvain	Belgium
Group 7.		
Group 8.	Ichi MORITA, World Federalist Youth	Denmark
Group 9.	A. McKILLOP, Low Impact Technology	England

IV. NOTES

- a) Since many participants will be accompanied at the Conference by their wives, who are cordially welcome, some of those who were late in registering or reserving their rooms will be housed at the Villa Ferrata in Frascati, five minutes by car from the Villa Tuscolana.
- b) Excursions will be arranged on September 26, 28 and 29 for those accompanying the participants at the Conference.
- c) IRADES will give a dinner on September 26 in honour of the Conference participants.
- d) Following the formal closing of the Conference on September 30, a short tour of Rome will be offered those participants and their wives who will not be leaving Rome immediately.
- e) The afternoon of the 28 and the evenings of the 27 and 28 will be reserved for meetings not scheduled in the programme.



CONFERENCE PREPARATIONS

PROGRAM

THE ROME SPECIAL WORLD CONFERENCE ON FUTURES RESEARCH 1973

25-30 - XI - 1973

HUMAN NEEDS - NEW SOCIETIES - SUPPORTIVE TECHNOLOGIES

Program (1)

The Rome Special World Conference on Futures Research 1973 originated from a compact between the Continuing Committee for World Future Research Conferences and IRADES, responsible for the scientific and organisational implementation of the Conference.

The Rome meeting follows conferences on futures research previously held in Oslo (1967), Kyoto (1970) and Bucharest (1972).

The theme of the Conference will be: "Human needs - new societies - supportive technologies".

The subject on which the discussions, as a whole, will be mainly focused is human needs which, in their transformation and various manifestations, differing in time, culture and environment, necessarily lead to new societies that answer or seek to answer such needs. Both human needs and new societies demand supportive technologies if mankind is to survive and if the individual is to achieve growth towards self-realization in the community.

PRESIDENTIAL COMMITTEE:

Flaminio Piccoli - Italy (President)
Bertrand de Jouvenel - France
Leopold S. Senghor - Senegal (2)

SCIENTIFIC COUNCIL:

Giorgio Nebbia - Italy (President)
Eleonora Barbieri Masini - Italy (Executive Secretary)
Francesco Alberoni - Italy
Igor Bestuzhev-Lada - USSR
Vincenzo Cazzaniga - Italy
Robin Clarke - UNESCO
James Dator - Hawaii, USA
Jacques Delors - France
Pietro Ferraro - Italy
Dennis Gabor - Great Britain
Joan Galtung - Norway
Lars Ingelstam - Sweden
Robert Jungk - Austria
John McHale - USA
Mihailo Marchovich - Yugoslavia
Peter Menke-Glükert - Federal Republic of Germany
Pietro Pace - Italy
Aurelio Peccei - Italy

-
- (1) The program is as it was distributed some time before the conference. Changes in participants are given in footnotes.
(2) T.A.Lambo, Nigeria

Pietro Prini - Italy
Roberto Rossellini - Italy
Valerio Selan - Italy
Jan Strzelecki - Poland
Ota Sulc - Czechoslovakia
Bart van Steenberghe - Netherlands
James Wellesley-Wesley - Great Britain

SCIENTIFIC COMMITTEE:

Giorgio Nebbia (President)
Eleonora Barbieri Masini (Executive Secretary)
Francesco Alberoni
Jacques Delors
Pietro Ferraro
Dennis Gabor
Robert Jungk
Peter Menke-Glükert
Pietro Pace
Aurelio Peccei
Valerio Selan
James Wellesley-Wesley

IRADES EXECUTIVE COMMITTEE:

Eleonora Barbieri Masini (Secretary)
Raimondo Cagiano de Azevedo
M. Letizia Guerrieri
Pietro Pace
Fernando Ragazzini
Carmine Silano
M. Teresa Tavassi La Greca
Carlo Virgilio

PREPARATION

Since the forthcoming Rome Conference is self-preparing, we have not simply drawn up a programme to which the participants are asked to adhere; instead, we have planned an event which will conform to the wishes of the majority of those taking part in it. Thus, at the outset we asked five persons of different countries, cultures and disciplines to submit their suggestions for a conference on Human needs - new societies - supportive technologies. On the basis of their replies, we prepared a questionnaire and submitted it to 20 experts in all parts of the world who, in turn, replied with suggestions which formed the basis of a draft programme. This programme was then sent to 40 persons for further comments and suggestions and ultimately to 60 others. From this final response, we prepared a new programme based -- and expanded as far as possible -- on the demands of various persons representing various countries, cultures and ideologies, all united in their preoccupation with the future of man and his needs.

The preparatory work of the groups has already begun; participants are making personal contacts among themselves, while papers are being distributed and read in advance so that the participants will be fully prepared before the conference not only to analyse the problem under discussion but also to propose valid indications -- which will be the main subject of the Conference -- for the work to be carried out during the year following the Conference.

DAILY CHAIRMEN, RAPORTEURS AND PANELISTS

Eleonora Barbieri Masini

Responsible for the section, on Forecasting Studies, IRADES, Italy

Igor Bestuzhev-Lada

Institute of Social Research, USSR
Academy of Sciences, USSR

Yehzkel Dror

Professor of Political Sciences, Hebrew University, Jerusalem, Israel

Mahdi Elmandjra

Assistant Director General for Programming, UNESCO

Elungu pene Elungu

Vice Rector, University of Kisangani, Zaire

M.S. Iyengar

Regional Research Laboratory, Assam, India

Bertrand de Jouvenel

Founding President, Association Internationale Futuribles, France

Harold Linstone

Senior Editor, Technological Forecasting and Social Change, USA

Magoroh Maruyama

Water Resources Institute, USA

John McHale

Center for Integrative Studies, State University of Binghamton, N.Y., USA

Peter Menke-Glükert

Ecologist, Federal Republic of Germany

Giorgio Nebbia

Professor of Resources, University of Bari, Italy

Aurelio Peccei

Founding Member, Club of Rome, Italy

Flaminio Piccoli

Member of the Italian Parliament, IRADES President, Italy

E. F. Schumacher

Economist, Great Britain

Leopold S. Senghor

President of the Republic of Senegal

William Simon

Director, Institute for Juvenile Research, USA

Jan Strzelecki

Institute of Philosophy and Sociology, Poland

PROGRAMME

The Conference will be conducted as follows:

° A critical review - prepared by

Prof. John McHale, of the Center for Integrative Studies, State University of New York, Binghamton, N.Y. - will provide a background for the urgent problem man is facing today and will face over the coming years in his struggle for survival and self-fulfilment.

This critical review is based on these four papers, prepared by specialists:

1) World economic development, contrasts, political inequality and interference

Dr. Maurice Guernier, Doctor in Economic Sciences, formerly Counsellor to the Commissariat Général du Plan (France).

2) Technics and human culture

Prof. Lewis Mumford, visiting Institute, professor of the Massachusetts Institute of Technology (USA)

3) Neither there nor then: a utopian alternative to the "development" model of future society

Prof. James Dator, head of the Programme in Futures Research, University of Hawaii (USA)

4) Assessing the possibilities and usefulness of modelling in making policies for the world system

Study Group of the Science Policy Research Unit, Sussex University (Great Britain)

° The panel will demonstrate the impact of these problems on human needs, new societies and supportive technologies.

1) Man and society: human needs and social needs, "tension towards and against symbols", the need to survive, causes of the increase in conflict as polarised between the individual and the group, etc.; man's difficulty in facing such conflicting demands, the relationship between food needs, etc. communication needs, etc.

Prof. William Simon

2) Man and society: human needs and social needs, towards "harmony between man and his natural context and between man and men", and towards an understanding of the society in which the system is determined by mutual interdependencies

Dr. Jan Strzelecki

3) The new principle: symbols owing to heterogeneity: an old principle: unity by similarity. Toward the generation of quality-of-life configurations

Prof. Magoroh Maruyama

4) We are moving towards the need for a great transformation in man's evolution; in this process all people must take part, to determine their own needs and to develop their own fulfilment

Dr. Eleonora Barbieri Masini

5) Alternatives to the Eastern and Western social models as offered by the countries of the South: common elements, different roles, different functions

Prof. M.S. Iyengar

6) Man's impact on technology, alternatives to existing technologies: old technologies reformed, intermediate technologies, innovative technologies

Prof. E.F. Schumacher

The groups will explore the themes at the Conference. Such explorations have already begun in the preparatory phase through contacts among the participants and an exchange of papers among the members of each group. Apart from analysing the problems under discussion, the papers advance concrete proposals. These proposals will provide the subject of debate during the Conference.

Plenary sessions

On the first day of the Conference (26 September) the groups will meet to clarify their positions and select the points of controversy which they will present at the first plenary session (27 September) in the form of questions put to the other groups.

They will then submit the results of their work to the second plenary session (28 September, morning) and their proposals to the third plenary session (29 September, morning).

These proposals will be presented to the public as guidelines for subsequent work to be carried out by specialists and others.

In short, the programme constitutes a continuous feedback between the groups and the plenary sessions and vice versa, for the purpose of arriving jointly at concrete proposals.

GROUPS

1st-Alternative concepts of human development, including personal development as a complement or alternative to economic development: presentation of images and conceptualisations of persons whose development depends not only on food needs, etc. but also on communication, interpersonal relationships, etc.

2nd - The need for man to accept responsibility for what is required of him by social institutions, and the need for institutions to become true facilitators in the man-society interaction.

3rd - Meta-scenario of alternative quality-of-life models, new societies based not only on the feasible but also on the desirable.

4th - Art as an indicator of the future and as a means for the development of man's creativity.

5th, 6th, 7th - The participation of all people in man's evolutionary transformation: the emergence of diversities and similarities (to be prepared jointly, but developed separately in the final months preceding and during the Conference).

5th - The participation of all people in physical and ecological survival.

6th - The participation of all people toward their self-realisation through communication: the present state, potential advantages and disadvantages of the "holistic" approach in the study of systems and the development of communications facilities.

7th - Participation of all people in human development, understood as the integral development of man on the individual and societal level: religion as a human need and as an integrative factor in human relations; other possibilities of integration.

8th - The presentation of alternative social models by countries of the South and the possibilities of common elements with diverse roles and diverse functions.

9th - Blueprint for a new technology: old technologies revised, intermediate technologies, innovative technologies, revolutionary technologies, new technological systems, communications technologies.

EVENING GROUPS

Structured groups at the request of participants:

- 1) The possibilities and utility of global models;
- 2) Sensitivity group: intrapersonal communication as a way to a more intensive interpersonal communication;
- 3) Policy-making for the future.

SOCIAL PROGRAMME

During the course of the Conference, social programmes will be provided, particularly for the benefit of those persons accompanying the participants.

There will be a tour of Rome immediately following the official closing of the Conference on Sunday, September 30.

INFORMATIONAL NOTES

Place of the Conference:

Villa Tuscolana

00044 Frascati (Rome) Italy

Scientific Secretaries

Several scientific secretaries will be put at the disposal of the participants for the entire duration of the Conference, to offer explanations on the work, receive suggestions and comments, etc.

Information Office

An information office at the conference headquarters will furnish information on transportation means; visiting hours at the museums, galleries, etc.; typical restaurants; theatres, concerts and films in Italian and foreign languages; addresses of embassies, consulates and academies, etc. Other information will be supplied on request.

Housing

Single and double rooms with bath are available to participants at the Villa Tuscolana, Frascati, where the Conference will take place. Meals will also be served at the Villa.

Those who wish to stay elsewhere must provide their own arrangements for living accommodations. Such arrangements can be made through the Thomas Cook & Son travel bureau.

Travel Agency

An agent of the Thomas Cook & Son travel bureau will be on hand at the Conference headquarters to provide information on rail, air and other schedules, to issue rail and air tickets, make travel reservations, organise special tours, etc.

Bank

A bank branch will be in operation at Villa Tuscolana for currency exchanges and all other banking transactions.

Transportation

Bus service will be provided from the airport and railway station to the Conference headquarters for those participants who notify us sufficiently in advance of the date and time of their arrival. There will also be a daily bus service between Rome and Frascati.

Language

English and Italian will be the official languages spoken at the Conference. During the plenary sessions, simultaneous translations in English, French and Italian will be provided. Consecutive translations will be provided for the nine study groups according to the linguistic requirements of the group members and the organisation's possibilities.

Post, telephone, telex

Incoming mail should be addressed to:

X.Y. Rome Special World Conference on Futures Research, Villa Tuscolana, 00044 Frascati (Rome), Italy. Letters will be distributed daily by the Conference secretariat. Outgoing letters will be posted daily by the hostess of the Conference.

Telephone (Villa Tuscolana: 94.22.510 - 94.22.593): long distance direct-dial calls (teleselezione) can be made to all parts of Italy and some European zones. Dial code numbers can be obtained at the secretariat.

For other localities, the secretariat will place your long-distance call.

Telex (IRTELEX). There will be a telex service at the disposal of those participating in the Conference.

N.B. More details on the organisation of the Conference will be given participants upon their arrival.

SECRETARIAT: IRADES - Via Paisiello 6, 00198 Rome (Italy) - Tel. 866.346/7/8/9.

TIME-TABLE25 September - Tuesday

Presiding: F. Piccoli
B. de Jouvenel
L.S. Senghor (1)

18.00 Opening of the Conference
Introduction: L. S. Senghor (2)

26 September - Wednesday

Presiding: P. Menke-Glükert
19.00 Introduction to the work
9.15 Guidelines of the conference:
E. Barbieri Masini

(1) T.A.Lambo
(2) B. de Jouvenel

9.30 Critical review: J. McHale
 10.30 Interval
 10.45 Panel session
 presiding: A. Peccei
 participants: I. Iyengar, E. Barbieri-Masini, M. Maruyama,
 E. Schumacher, W. Simon, J. Strzelecki
 12.00 Discussion
 13.00 Lunch
 16.00 Working groups:
 Constitution and method of work
 17.30 Interval
 17.45 Working groups: session
 20.00 Social programme in honour of the participants

27 September - Thursday

Presiding: Elungu pene Elungu (1)
 9.00 Plenary session
 with questions and answers among the different groups
 13.00 Lunch
 16.00 Working groups: session
 17.30 Interval
 20.00 Dinner
 21.00 Evening groups (°)

28 September - Friday

Presiding: I. Bestuzhev-Lada(2)
 9.00 Plenary session:
 reports from the different groups
 11.00 Interval
 11.15 Working groups: session
 13.00 Lunch
 16.00 Various meetings, personal contacts, etc.
 20.30 Dinner
 21.30 Evening groups (°)

(1) T.A. Lambo
 (2) P. Apostol

29 September - Saturday

Presiding: H.A. Linstone

9.00 Plenary session:

Proposals for follow-up activities

10.45 Interval

11.00 Discussion and correlation of proposals for follow-up activities

13.00 Lunch

16.00 Discussion and correlation of proposals for follow-up activities

18.30 Interval

19.00 Open public meeting

Presiding: G. Nebbia

21.00 Dinner

30 September - Sunday

Presiding: M. Elmandjra (1)

9.00 Presentation of proposals for post-conference work: Y. Dror

11.00 Farewell to the participants

(°) These sessions, to be known as "structural meetings", which may wish to benefit from the organisational and communications facilities at the Conference, can be held on the evenings of the 27th (Thursday) and 28th (Friday). The need for such meetings may become apparent before or during the Conference on a wide range of interests of the groups taking part in the Conference (i.e. politics, science, organisations, etc.). Such initiatives could result in meetings of, for example, the Continuing Committee, a sensitivity group, discussions of global models, etc. Whatever lies beyond the framework of this programme cannot be included among the organisational duties of the Executive Committee.

(1) M.Markovic

CONFERENCE PROCEDURE

INTRODUCTION

EVALUATION OF MAN'S PROCESS OF HUMANIZATION

by

T. Adeoye Lambo, O.B.E., M.D., F.R.C.P., Hon. D.Sc.,
 Hon. LL.D., Assistant Director-General, World Health
 Organization, Geneva

Formerly: Vice-Chancellor and Professor of Psychiatry
 and Neurology, University of Ibadan, Nigeria

Your Excellencies, Distinguished ladies and gentlemen first of all,; allow me to thank the Organizing Committee of the Rome Conference on Futures Research for the distinction of being asked to give this introduction to the Conference. This honour, as I see it, belongs rightly to the Third World. If the West has brought to the Third World all the achievements of its science and technology, including its effective knowledge of facts and control over natural forces and its triumph of which past ages did not even dream of, the Third World possesses riches from which the West can gain equal profit should it wish to do so.

"If I were asked under what sky the human mind has mostly developed some of its choicest flights, has most deeply pondered on the greatest problems of life, and has found solutions to some of them which will deserve the attention even of those who have studied Plato and Kant - I should point to India. And if I were to ask myself from what literature we, here in Europe, we who have been nurtured almost exclusively on the thought of Greeks and Romans, and of one Semitic race, the Jewish, may draw that corrective which is most wanted in order to make our inner life more perfect, more comprehensive, more universal, in fact more truly human - a life not for this life only, but a transfigured and eternal life - again I should point to India."

These were the words of Max Muller at one of his Cambridge lectures. What Max Muller was trying to say is that in spite of these stupendous achievements of Western civilization in the realm of science and

technology, for its balanced and harmonious development, it still lacks the beauty of the Greek, the durability of the Chinese, the profound mysticism of the Hindu and the essentially human and social contents of the African civilization, including its great zest for life and romantic freshness.

I do not think we could have had a better setting than Rome to assess the human needs of our time, to forecast the structure of new societies and to attempt to define the direction in which man is heading. For those who admire classical antiquity for its own sake, the soul of the scholar and poet will be deeply moved as they wander among the remains of Rome's imperial past which still stand, grand and desolate, in every quarter of the ancient capital.

In the Creation of the World and two other poems of Hildebert of Lavardin, who ended his career as Archbishop of Tours and whom Sandys called "the best of medieval Latin poets", Hildebert showed this deep love and knowledge of classical antiquity, a sense of the glory and beauty of the inheritance of the Roman past. But unlike most medieval writers, he was a keen observer of the world about him, of men in daily life, of animals, and of natural things.

In an age such as ours, which knows little about history and almost nothing at all about the history of ideas, it is important to retrace the path which man has trodden. As you know, barbarism and confusion reigned supreme throughout Western Europe for a hundred and fifty years. From the Atlantic to Constantinople, and from the Rhine and Danube to the deserts of Africa, all that was learned and cultivated, all that was artistic and beautiful was overwhelmed in an avalanche of ruin in which not only the triumphs of architecture, literature, and art, produced by many centuries of high civilization, but also those who could create such things afresh, were involved in one general devastation.

Out of this emerged many men of great talents in poetry, in art, in learning and in science, to arouse men again to a sense of the beautiful and the cultivated; and art and literature began to flow back to their

long-deserted Western homes. And so, out of the very grave of that old civilization of Rome, buried deep nine centuries before, came the new inspiration, the Rebirth.

Today the arts are still the avenues by which the mind of man soars to its highest limits, by which the process of humanization is maintained, by which human civilization and communication is conducted across national and international cultural barriers. I think a quick glance at this section of the history of antiquity - of the ancient historians and poets, artists, scholars - reveals that men before us have sometimes had noble aims, especially in their unswerving quest for objective truth, and have left behind them things which still shed a blessing of one kind or another on mankind.

It is obvious that "man has walked by the light of conflagrations, and amid the sound of falling cities: and now there is darkness and long watching till it be morning". The fact of the matter is that we are living in the midst of a social and economic revolution more intense and far-reaching than all the mere political revolutions that the world has ever seen. It is insidious in its invasive virulence, it is alarming in its proportion and protean in its manifestations and equally polymorphic in its clinical features. Of course, the "optimism" of the scientist must not be confused with the ignorant and fatuous complacency of some of our leaders of today.

No one realizes better than the scientist the prodigious alternatives of good and ill which confront our age: the complex problem of adjustment to new surroundings, to the new value attached to power and money, aggressiveness and violence and to materialism; the equally difficult task of harmoniously reconciling our new science and technology to our traditional attitudes and belief systems; the ominous possibility that human nature may be inherently unequal to the task. The West seems hardened into dogmatic intolerance of new and innovative ideas of social and economic justice. If this is true, we must be aware of the volcanic possibilities latent among even the most liberal and "civilized" peoples of the Third World.

What sustains our hope today is the thought that in a world so plastic and dynamics, as we now see it to be, the mind which has conceived and evoked these problems possesses the wit and the capability to solve them: that, despite all the perils which may encompass man, he has a good fighting chance of winning through. That should be the challenging and inspiring note on which to base our conference. We are living in an age in which, according to Thomas Carlyle, the spiritual malaise can only be matched by the Physical disease of Society aggravated by laissez faire.

" Wealth has accumulated itself into masses; and Poverty, also in accumulation enough, lies impassably separated from it; opposed, uncommunicating, like forces in positive and negative poles... How much among us might be likened to a whited sepulchre; outwardly all pomp and strength; but inwardly full of horror and despair and dead men's bones! Iron highways, with their wains firewinged, are uniting all ends of the firm Land; quays and moles, with their innumerable stately fleets, tame the ocean into our pliant bearer of burdens; Labour's thousand arms, of sinews and of metal, all-conquering everywhere, from the tops of the mountain down to the depths of the mine and the caverns of the sea, ply unweariedly for the service of man; yet man remains unserved. He has subdued this Planet, his habitation and inheritance; yet reaps no profit from the victory. Sad to look upon; in the highest stage of civilization, nine tenths of mankind have to struggle in the lowest battle of savage or even animal man, the battle against Famine and against ruthless exploitation and social injustice."

These are the words of Thomas Carlyle during the winter of 1831-32 in his London lodging. He shared the plight of those who, like Friedrich von Schlegel, rebelled against materialism and struggled "to be persons, not machines", to have respect for man, for freedom, for creativity, for diversity and variety and for human understanding. Carlyle developed in an eloquent passage, Signs of the Times, that remains a classic document on the spiritual and social history not only of his period but also of our contemporary life. What a paradox is modern life!

On the ~~one~~ hand, we see a sudden extension and expansion of human knowledge and power so stupendous as to stagger the imagination. We have literally leaped into a new self-made world of science and technology and of affluence in which the hidden powers of nature have yielded themselves wholesale, as though at the wave of a magician's wand. Such is the brilliant side of our age. But there is another - and a darker side. The hope of ancient sages: "Know Thyself!" seems very far off.

This new world which we have suddenly entered, resplendent though it be, proves likewise in many respects a troublesome and perplexing abode. Unprepared by previous experience, swayed by ideas and habits brought with us from other times and cultures, and confused by the very magnitude of our new powers and the ill-digested mass of our new technology, we are like pioneers in a strange land, perplexedly feeling our way amid unfamiliar scenes.

Indeed, it is not yet certain that we can permanently dwell in this new world of ours under the present social, economic and political conditions. The deeper we probe the recesses of human nature, the more painfully do we realize man's innate weaknesses and limitations.

We need some exact knowledge of the future to guide our footsteps and chart our path. We are all here this week because "the vital articulation of many individuals into a new collective individual" is imperative.... "To figure Society as endowed with life is scarcely a metaphor, but rather the statement of a fact by such imperfect means as language affords."

As I see it, especially from the point of view of the Third World, we are gathered during this week to seek answers and, maybe, solutions to many of man's incalculable problems in an age of science and technology, at a time when a new dimension of relationships and of time is being added to his thinking, when life is becoming more impersonal, dissociated and alienated from its organicity, and when the self-esteem of the Third World is being threatened and the balance between the two polarized groups is only just maintained, and rather precariously.

Why are we here to ask ourselves searching and agonizing questions about man's process of humanization, his deeper needs that may transcend the immediacy, his motivations, his reactions to new problems, new challenges, new concepts, to the intensity and acceleration of change and to the idea that it is no longer considered utopian to assess, plan, and be prepared for the problems of the Future? The answer may be found in Whitehead's words:

"It is the vision of something which stands beyond, behind and within the passing flux of immediate things; something which is a remote possibility, and yet the greatest of present facts; something that gives meaning to all that passes and yet eludes apprehension; something whose possession is the final good, and yet is beyond all reach; something which is the ultimate ideal, and the hopeless quest."

It would only become a "hopeless quest" and remain beyond our reach if the developed countries continue to "rationalize" their behaviour towards the Third World by which they instinctively attempt to discredit the challenges of our time - the ever-widening gap between the rich club and the poor - and justify their attitudes. We need some cold, dispassionate rationality to assess in objective terms the need of the individual and the community, the role of international support, international responsibility, etc.

According to Paul Weiss:

"Men lose their chance of development if they turn away from nature, cease to recognize their dependence on the universal whole, and direct their love, their fear, their reverence only upon the strivings and sufferings of themselves and their fellow-men. No man can be an artist for all time, whose only concern is with the human soul, its passions, pains, aspirations, its conflicts or friendship. He remains a soul-searcher, a psychologist, a character pointer, a man of the theatre who tears out a part of truth from the web and presents it for the whole... Goethe's lyrics are quite impersonal. Shakespeare's men were real, Goethe's were true."

These words underline the urgent need for a global strategy, for a civilization which emphasizes that values need each other and that value should stress and reflect the essential unity of the many. The tactics of such a global strategy "should consist in the approach to multiplicity by the adjustment of its many potentialities into finite unities, each unity with a group of dominant ideas of value, but mutually interwoven....".

René Dumont in his recent article, 'Third World in Mortal Danger', observes: "It seems to me that a standard of civilization which cannot be generally applied on a world scale is morally unacceptable". It is one of the perversities of Western civilization that despite the experience of ages, which should have taught man the supreme value of creative socialistic and liberal thinking, he tends to distrust and dislike pioneering intelligence of this kind and innovative thinking as something wickedly shocking and disturbing. This instinctive dislike of disturbing novelty, so widespread in the Western man, should be seriously studied, because it is one of the chief obstacles to socio-economic and political progress. There are manifest signs of uneasiness and dissatisfaction by the Third World, often rather inarticulate and illunderstood."

We are "up against" the toughest problem of re-adjustment by the wealthy countries to the needs of the Third World that mankind has ever faced. Never before has the impact of new demands been so insistent; never before has the pressure for new, innovative social, political and economic conditions been so intense. It is necessary to probe a little deeper into man with our research in order to estimate more accurately the emotional resistance which may have to be taken into account in our attempt to bring about this desired change.

There have been moments in the history of man when new concepts and ideas were discovered. There was such a moment with Copernicus. There is such a moment now. We are all aware that the immediate future holds within its possibilities different alternatives from anything that

has been known in the past. Mankind has entered upon a new phase. Lack of awareness of this fact will ruin, and is ruining, our social and economic systems. We are gathered here determining how to adapt various systems to a uniform examination. We should beware, lest proving ourselves descendants of Wordsworth's bad man, we

"Take the radiance from the clouds
In which the sun his setting shrouds."

It is obvious that a mighty task faces us now and for some time to come. There are evident manifestations of malaise with our present civilization, during which man's capacity to survive on this planet is being tested. The rise of modern science and technology has not removed or modified the basic human predicament which the insight of the ages has discerned; rather, it has underlined it. Men still go to war or heap to themselves riches for the same motives and with the same passions as in the days of old; they marry and give in marriage as in the days of Noah; they still desire to be 'as God' as in the day of Nineveh and Tyre. That is why the ancient historians, artists, prophets and poets can tell us just as much about our basic human existence as can the modern ones - and it makes no difference at all whether they believe in a Ptolemaic or a Copernican or an Einsteinian cosmology or, for that matter, as in Africa, whether they believe that the earth rests on the back of an elephant standing on a tortoise. To me, perhaps, the most impressive development of modern science is the new knowledge which we are beginning to acquire concerning the nature of man. It is no overstatement to say that scientific research has revolutionized our outlook on the starry heavens above us or the earth beneath our feet more profoundly than it has done for our ideas concerning ourselves.

In the past, man has been usually regarded as^a rational, sensible being, tending normally to prefer a prosperous, orderly, and peaceful life if he were placed in fitting surroundings and if the advantages of such an existence were properly impressed upon him. Philosophers

claimed the power of "reason", economists depicted their common-sense "economic man", while statesmen urged the transcendent value of liberal institutions. Even today most of our political and social efforts are quickened by the belief that if mankind can only get enough wealth, leisure, security, justice and similar favourable conditions, all will be well and peaceful progress will be automatically assured. The truth of the matter is that man is a walking paradox, a baffling compound of diverse tendencies. It is this strange combination of the saint, the sage, the child, the barbarian, the savage and even the pre-human, with which we have to deal in all life's problems.

In our search for truth about man, in our attempt to establish a deep plane of consciousness and accept the concept of many realities, especially as new and critical situations arise, we must use all expressions of human thought-objective and scientific, intuitive and subjective, as well as employ all disciplines to tackle the problems of the future.

There have been many warning voices in recent times: Charles Fourastier, Pierre Mass, Alvin Toffler, The Club of Rome, Gösta Ehrenswärd, Jay Forrester, Waddington, John McHale, to mention only a few. During the Nineteenth Century, personalities as varied as in outlook as Carlyle, Cardinal Newman, Ruskin, and Tolstoi, however much they differed in their positive programme for human betterment and social progress, were agreed in the condemnation of modern science and its fruits. Other zealous prophets of woe ranged all the way from Bertrand Russell to Mr. Chesterton and Mr. Bryan. Russell based his disquieting conclusions not merely on recent tendencies in the scientific and technological movements, but also on innate limitations and shortcomings of human nature, which may render our modern technology more of a curse than a blessing. What is defective is not science and technology, but the variety of opportunity for useful and constructive purpose to which technology could be put in order to enhance human dignity and advancement for all in the social and economic spheres.

Whether these warning voices be true or false, one thing is certain: today, sound diagnosis of our social ills has become possible, and is becoming increasingly accurate. In fact, much of our so-called "literature of despair" is not so much pessimism as clinical examination with penetrating insight into their uncertain prognosis.

The very fact that we are so keenly aware of, and globally concerned with, our inadequacies, social, economic and political imbalance, varying degrees of impairment of our infringement of social justice and human right, is the best sign that we are going to find solutions for them. The mere presence of danger is, in itself, no reason for nervous dread. Indeed, to the healthy, normal man, the spice of danger is apt to be rather a challenge and an inspiration. Only when peril looms overwhelming and inescapable does despair chill the heart and paralyze the will. And surely no well-informed observer of our times can dogmatically assert that we are in any such hopeless posture.

It seems to me that the outstanding feature of contemporary world affairs is one of profound and general disharmony between the two polarized groups - the "haves" and "have-nots" that is, the rich which is getting richer and the poor which is getting poorer and frantic, resulting in an endless maladjustment, perplexities and conflicts. The immensity of the human problems calls for revolutionary thinking and action unprecedented in human history. I reckon such "revolution" must affect every phase of human activity, girdle the entire globe, and involve all mankind in order to produce adequate human needs, dynamic and contended new societies, supported by technologies that are not divorced from basic human realities.

This is the first time in history that the Third World has consciously and with determined purpose entered upon a task of directing its own fortunes. Hitherto, it has been a puppet in the cruel and cunning hands of the western monopolies. There is no doubt in my mind that the Third World has the intellectual grasp and emotional poise necessary for the task of "going it alone". Such a move does not

spring from an impulsive idealism but is characterized by a keen sensitiveness to our present social evils and by a comprehensive grasp of the whole situation.

Over large parts of the world that we now call the Third World, the quality of the collective life continues to deteriorate and their power for social and economic reconstruction continues to be sapped.

The growing emotionalism of our times in the Western world involves a corresponding diminution of the rational, tolerant attitude best described as "liberalism". This decline in the qualities of open-mindedness, readiness to hear and discuss other viewpoints, respect for differences of opinion, and downright common-sense, reveals a truly amazing paradox between the way we accept the material benefits of modern science and technology, and at the same time reject rational processes of humanization.

The reformers of the Third World seem so fired by the sense of present evils that they have to embrace non-orthodox gospels in order to generate new forces and ideas. A wholly new set of motives for social order is definitely conceivable, resting upon none of these old institutions of the West. The problem of human degeneration, degradation and exploitation is a life-and-death question, involving not merely the fate of modern civilization, but possibly the entire future of mankind.

Keen-sighted observers, especially the futurists, are coming more and more to realize that our whole civilization is undergoing an acid test of ruthless re-evaluation. If this assessment of the situation is correct, humanity's watchwords from the Third World must be: "No Surrender!" and "Carry On!" . Only by fresh defiance of the forces of exploitation and socio-economic impoverishment; only in greater mastery over forces of injustice and a more balanced and satisfactory environment, can man find safety and assure his future. And he can do this only by using to the full ~~THE~~ brains he has inherited and the technical knowledge he has acquired.

The developing countries should not depend entirely on the developed countries for their growth and development, even though their activities

should be interdependent. The new concept of self-reliance should be the basis of their future philosophy and action. As a shrewd observer of world affairs remarks:

"Never before have we had to rely so completely on ourselves. No guardian to think for us, no precedent to follow without question, no law-maker above, only ordinary men set to deal with heartbreaking perplexity; All weakness comes to the surface. We are homeless in a jungle of machines and untamed powers that haunt and lure the imagination. Of course our culture is confused, our thinking spasmodic, and our emotion out of kilter. No mariner ever entered upon a more uncharted sea than does the average human being born in the Twentieth Century. Our ancestors thought they knew their way from birth through all eternity: we are puzzled about ^{the} day after tomorrow".

These were the words of Walter Lippmann on "Drift and Mastery" in 1914, and there is no doubt that this should be the basis of future action of the Third World.

In conclusion, if the progress of science and technology has created anxious problems in a divided and fear-ridden world, technology too may help to solve them. For even now technology, as Professor Toynbee has said, is the one achievement of Christian civilization which the whole world is willing to accept. The significance of this fact for the future well-being of mankind one hardly dares to estimate, but the potentialities of a common language, a common interest and a common understanding and respect are obviously so great as to induce in us a sober hope for a future liberated from some of our present fears. One thing is certain: despite all the upheavals caused amongst primitive peoples by the introduction of scientific methods of agriculture and industry, technology alone provides for the countless populations of Africa and the East the hope of higher standards of living and of education and of the possibility of release from poverty, famine and disease.

By Flaminio Piccoli
President of TRADES
Member of Italian Parliament
Journalist, Linguist

Friends and Participants,

In its theme "Human needs - new societies - supportive technologies" the Special Rome Conference on Future Studies, which opens today, synthesizes the most serious and soul-stirring problematic of our future, to which the liberating hopes and expectations of a "friendly" technology are intimately bound.

The decisive element of our situation is the new realization that society today possesses the technological capacity, hence the possibility, to redeem and emancipate human life in human terms.

A rapid glance at technology's present vertiginous evolution, which makes it possible today to solve problems deemed unsolvable only a short time ago, will show even the most casual observer that now it is possible to eliminate misery and poverty, or at least reduce them considerably, and that it is no longer a utopian dream to add a truly constructive dimension to man's labor. But this can happen only if it is possible to avoid squandering energy in pernicious hegemonic rivalries between states and social groups, and in the blind pursuit of personal or national interests.

Unfortunately, in the past several decades, society has been following an impulse bereft of any harmonious, equilibrated development; with their swift quantitative growth and the pursuit of material well-being at any and all costs, our social structures have failed to achieve a parallel growth in the qualitative sense.

Man, overwhelmed by the illusory myth of progress, has gradually and almost unwittingly fallen victim to the enormous potentialities of modern technology.

For some time now, hope in science has supplanted the bygone illusory, romantic revolt against technics; but then, how many daily vicissitudes would seem to contradict and shake that faith! The dramatic impoverishment of our natural habitat, the fragmentation of interests, a diminished sensitivity and perception of our humanism and the individual's reduced participation in common choices are restricting and suppressing man's freedom more and more every day.

How then can technology support the human needs of the new societies? I believe that, in reality, the problem lies not so much in the instrument as in the use we make of it or wish to make of it. Therefore, the problem invests the sphere of basic choices, and it must necessarily be reflected in the decision-making responsibility of the politician.

This thought, constantly in my mind, represents a commitment, particularly because I am aware that the man of politics suffers, too, in the daily swirl of affairs, from that same incapacity to master a general, organic understanding of the problems that afflict the mass of citizens.

Man's isolation from his own future history threatens to compromise irreparably the world of tomorrow. We must find solutions now, today; among them, the decisive solution will undoubtedly be a new concept of education that will train man to think habitually of the present in terms of a constantly evolving future.

In this progressive, delicate work of sensitizing public opinion and those individuals directly responsible for making decisions which will determine man's life, I believe that all of us expect much from the Conference which is being inaugurated here tonight, and we anticipate a productive period of work and meditation. The problem of man, of his intellectual, spiritual, psychological and social scope, will be the pivotal aim of the efforts and explorations put forth during this week of study; and I am sure that, in pooling your various experiences, this hope, which is the hope of us all, will not be disappointed.

As President of the Institute which has organized this Conference, I wish to declare that our work must be directed towards finding and shaping concrete indications for change and social trends, either extant or potential, towards suggesting new directions to follow, singling out elements for alternative solutions, indicating margins of error and developing a new model of society.

As a man of politics, I hereby guarantee our commitment to discuss, experiment and verify the results of your studies and to look at the

future not as an evasion from the present but as a dynamic frame of reference for the problems of today concerning man's true needs, responsibly aware that the choices we make now will condition the world of tomorrow.

Another hope of this Conference is that it will promote the realization that every man's destiny is bound to the destiny of all other men, and that all of us, specialists, scholars and men of action, must struggle to achieve a future that fulfills our hopes for freedom, peace and respect for every human being, not a future in which the few dominate the many. We must realize that this can only be achieved by assuring the tutelage of a real pluralism in the confrontation and clash of ideas. Only in this way can humanity escape the aseptic, hallucinating "Brave New World" foreseen by Aldous Huxley, and move towards what Erich Fromm defines the "revolution of hope."

In conclusion, I wish to extend my special thanks to the Mayor of this wonderful city -- which, because of its historical and humanistic traditions and its position as a point of convergence for diverse cultures and ideologies, offers an ideal meeting place between the past and future -- and express my sincere hope that the Conference which opens tonight will bring rewarding results towards solving the problems that involve us all so deeply.

GUIDE LINES OF THE CONFERENCE

By Eleonora Barbieri Masini
Responsible for the Social and
Human Forecasting Studies,
Section, IRADES

INTRODUCTION

Today we are launching the work of a "special" conference with special purposes which differ from those of other world conferences, intended mainly to bring together various ideas and aims, although certainly such conferences in the past -- those held in Oslo, Kyoto and Bucharest -- have given ample proof of their value.

Before specifying these purposes, I wish to stress the continuity in our links with these previous conferences and the unifying thread. We have worked together for years -- perhaps not so many -- in our effort to demonstrate the importance of the work we are doing, not only for our own benefit which would be meaningless, but for all men beset in their daily lives with preoccupations for their future and the future of their children.

I. What is the purpose of the Conference?

- 1) A purpose of participation in our joint search to explore as profoundly as we can the reasons why we are so concerned with the future we are facing, involving serious options open to mankind, which must weigh, verify and accept or reject them.
- 2) An operational purpose to single out those results of research that can be implemented. For too long we have concentrated our efforts on research, analyses and discussions without acting. But now the time has come when we must take concrete action, when we must decide if and how man is to survive.
- 3) This purpose means determining what priority actions will lead to man's betterment or destruction. Pure methodological research is not enough. We must call a halt to our search simply for economic, ecological and political trends, explore the trends

themselves and decide which methodologies and trends can help man to survive and fulfill himself, if he is not to pass into extinction.

- 4) This purpose involves all men in the choice of priorities. Priorities should not be established by a few men for all men. Therefore, we have done our best to bring together every possible current of thought and ideas and thinkers representing a wide range of cultures. Certainly, this representation has its limits and failings; nevertheless, we have succeeded in gathering together participants from Africa, Asia, North and South America, Australia, Eastern and Western Europe. Fully aware of these limitations, we shall begin our search today, and work together to examine the future for what we believe is important to man.

- 5) This purpose means studying the specific theme of human needs which, in their transformation and varying consequences, can reveal and build new societies, in which technology can be supportive or destructive, as we all know.

This is the theme which, together with its sub-themes, will be studied and developed in the working groups, a theme we have tried to maintain integrated in all its complexity. This has been difficult because of our forma mentis, especially Western, which incline to fragment and categorize, thus losing interconnections, interrelations and reciprocal influences.

During the Conference, we shall seek to recapture these things by transcending differences of language, disciplines, ways of thinking and fragmentation.

II. Returning to our purpose, it has dictated our choice of working method, both in preparing and developing the Conference. The method, therefore, was chosen because it is meant to further the goals of the Conference.

The participation purpose requires that, in developing the theme and choosing the sub-theme and parts, as many participants as possible

should take part.

Thus, we have developed our work together. We have tried to maintain contacts with the participants to facilitate exchanges of ideas and suggestions. These exchanges became the basis of the memoranda which incorporated the new ideas on content and work methods. The self-preparing phase of the Conference lasted almost one year.

Our operational purpose urged us to lose no time in searching for solutions to the problem under discussion. Therefore the papers will not be read at the Conference; instead, we shall proceed immediately to debate the solutions they propose rather than their analytical aspects. I shall return to this at the end of my brief exposition.

In its purpose, research in futures studies centers on man. This has been the guideline of the Conference in the choice of themes and participants in our desire to work towards a future will be human for all men. Thus, we have sought to have the participation of various countries and cultures.

III.- I should like to thank all those who have helped, directly or indirectly, in preparing the Conference with their advice, their efforts and their encouragement, as well as all those who are participating today towards achieving our goals. I wish to thank, too, all those who are unable to join us for one reason or another, but who are close to us in spirit. And here I should like to make a personal observation: that during this period of very hard work, I have found good friends -- an invaluable bonus indeed. And if some of them have different ideas from mine, still we are united in a common purpose.

IV.- In aiming for this common purpose, we are all facing a heavy responsibility. Certainly we cannot change the world in five days, but much is being expected from this Conference, from various quarters and on various levels. We must give an answer to these expectations, implicit or explicit. Our research must not be merely academic; rather we must direct it towards finding solutions to the dual problem of survival and creating conditions so that our children can realize fulfilment. Ours is a social commitment of solidarity with the

generations of the future, a moral involvement.

We must not conclude this Conference leaving behind only well-turned phrases and fine, but empty, declarations. We must conclude it with realistic, concrete proposals for productive follow-up action.

V. This is a "step-forward conference" on the road we and others must follow in the coming years. But however smoothly it may progress, if it fails to produce indications for solutions to some, at least, of the urgent problems facing the world today, then it will have failed its purpose. It is a "special" conference because it makes no attempt to offer the whole, but only a part. All the same, this part is an essential basis for constructive future action.

After September 30th, it will be our task and the task of many others, to work for man's survival and fulfilment, abetted by the help of what has been accomplished during our sessions. I hope this will be much, and I thank you all again.

CONFERENCE PROCEDURE

BASIC PAPERS (ABSTRACTS)

COMPUTER MODELS AND WORLD PROBLEMS

By Sam Cole
Researcher

This paper, focusing mainly on "what we might reasonably expect to get out of our present attempts to build large-scale computer models", is divided into three sections:

1) The first reviews briefly the process of modelling, then discusses the circumstances in which large-scale computer modelling could be useful. If modelling is to be useful to policy-making, it must be clear and based on mechanisms representing a summary of the main influences and consequences of the system studied; its results must be communicable, relevant to practical issues, and acceptable, even if a potentially useful model may not be technically or logistically feasible. Technical feasibility requires computers able to cope with the models of the type being considered here, and a methodology capable of handling representations of dynamic and interactive systems. On the other hand, logistic feasibility requires the underlying theories upon which the model is based to be individually sound and mutually consistent, also that coherent data compatible with these theories should be available for the region considered. On the first levels, modelling is useful to generate a corporate body of theory, related to which are questions of the data required to substantiate that body of theory. A wider agreement on the body of theory makes modelling the specific catalyst of a coherent and consistent data-gathering activity.

2) The second section of the paper examines various types of "world models" in existence or now under construction at different institutions around the world. Cole gives particular attention to Forrester's model, which is Malthusian since it supposes that we live in a finite world, in which growing populations and wealth pitted against declining natural resources and increasing pollution will stop growth. Catastrophe can then only be avoided by a global equilibrium, with stationary levels of population and wealth. This model has been the starting point of

large-scale modelling aiming to examine a variety of world problems.

"Models can be described on the various spectra which display their properties": they can be interactive (depending on their degree of interaction with "mental models") or merely trend projections. Between them are "goal-oriented" and "scenario-oriented" models. Goal-oriented models: The Bariloche (Argentina) and the Netherlands Delft group's models are goal-oriented. Another approach is that of Linneman's Dutch group, which takes a given world scenario and examines the possibilities for achieving satisfactory living standards in the context of that scenario.

Since the variables of Forrester's model have a level of extreme aggregation, it does not distinguish the different world sectors from a social, economic or physical point of view. Almost all the groups named have attempted to solve the associated theoretical, empirical and computational difficulties, as has the Japanese group led by Kaya. Another project with the same aim is the International Labour Organization's BACHUE model, to test the interactions between population growth and employment on an intranational level in order to shed light on employment policies in developing countries. A characteristic of this model is its high level of disaggregation (another modelling spectrum).

Cole then returns to the question of welfare indicators and their overall relationship to models as a whole, very important since they make policies socially acceptable.

The Japanese group is carrying out a program to analyse the value standards of the Japanese people and its change, while the Sussex group is involved in a similar study on both a national and world-wide scales. The Sussex group has carried out a feasibility study for the construction of a European model on a level of description capable of analysing European policy issues as influenced by regional phenomena. It has constructed a core model, an experiment taking into account the most important social and economic determinants of long-term development; it concentrates mainly on those issues with the soundest theoretical base. Therefore the core model could be used to represent a set of more areas. Efforts are being made to maximise global modelling utility by finding the right combination of technical opportunities, at the same time recognising logistic constraints.

3) Cole offers suggestions on how he would like to see the future development of large scale-models proceed, and explains the kind of work currently carried out by the Science Policy Research Unit of the Sussex University. He repeats the question: what are the future possibilities of the world models?

Cole makes some observations on the modelling process, such as the problem of the universal acceptability of models, the organisation and management of the large multi-disciplinary teams needed to construct global models, the question of data and theory, the questions relating to the validation of models, and those concerning the numerical aspects of computer calculations.

Models are useful aids to efficient research but only as a partial representation. Therefore there are two major issues to be tackled before they can realise their full potential: establishing a satisfactory, comprehensive and consistent knowledge base, and the satisfactory integration of models into policy-making situations. Thus, modelling can be improved by formulating a series of realist goals for each stage. But when we look at the long-term future and at the eventual applications of the world models, everything is still open, and even if models are nothing more than "science fiction", they may be useful in seeking out worthwhile goals.

NEITHER THERE NOR THEN: A EUTOPIAN ALTERNATIVE TO
THE "DEVELOPMENT" MODEL OF FUTURE SOCIETY

By Jim Dator
Associate Professor,
Department of Political Science
University of Hawaii

My problem here is how to try to make a contribution towards a solution of a problem without thereby becoming part of the problem. No matter how I attempt to phrase the problem that I wish to tackle, by that very phrasing I thereby attest to my failure really to understand what the problem is. But I have accepted the obligation to try, not because I think I somehow know better than you what the problem is -- still less because I think I somehow know better than you what the solution is; I accept the challenge simply because I was asked to do so, and I have never been known to refuse to do something merely because I know nothing about it. Indeed, if I acted only upon those things in the world that I understand, then I would still be lying swaddled in my cradle, for I know nothing. What I think I have learned, I find I unlearn or relearn in the process of teaching others; I learn from those who would have me teach them, and in the process of teaching something I am thought to know, I come to learn things I have not known before.

My topic was assigned to me by these symbols: "Is the social model of development in East and West necessary and still valid within certain limits for the countries of the South?"

I will begin to certify my ignorance of the problem by saying that I have divined these signs to mean: "Is there a crisis in the image of the future which is signified by the term 'development' such that the image has lost much of its appeal to persons in 'developed' and 'developing' countries alike? If so, why? And if so, what might replace it?"

Now, assuming my re-phrasing of the question to valid ^{be} -- or not, at least interesting, I proceed to answer the question as I have restated it:

Yes, there is a crisis in the concept of "development" as an image of the future. The concept and fact is being seriously attacked from within the "developed" nations by environmentalists, "counterculturalists", humanists, and assorted neo-nostalgics. It is being attacked by some people within the "developing" countries who allege it to be a debilitating mirage or an imperialist tool.

Yet, many people still defend the notion of development most enthusiastically. Many "modernizers" abroad, and leaders of the underclasses generally, emphatically demand the right to "develop," and despise environmental, humanistic, or any other attempts to deny them their long-awaited share of what they consider to be the "good life." Within the developed countries, the "average man" too seems unwilling or unable to turn away from the goals of growth even when he is told that he has no choice but to do so.

So, what is to be done?

Now, if this is indeed the problem to which I have been asked to address myself, I see that I could approach it from one of two ways. Either I should write a scholarly, analytical, and objective treatise on the problem, or I should try to offer a highly personal suggested solution to it.

It seems to me that we have more than enough analyses. Indeed, part of the problem may be that while we excel in analysis--especially directive criticism--we have so little experience with synthesis or creative imagining.

As for personal solutions, I must admit that we have not a few of them as well, so perhaps I err in principal as well as result when I choose to satisfy my assignment by offering a personal suggested solution to what I think is our problem. Yet, that is what I have decided to try to do. In the process of stating my case I also try to make fair appraisals of the defenses and attacks upon the development model and its alternatives--I hope that scholarship, analysis, and objectivity are not lacking from my paper!

In my paper for the Rome Special Conference on Futures Research 1973 I attempt to consider the adequacy of the "development" model as an image of future society by making a case for--and considering the arguments against--a model of future society which might be called "beyond development."

I do not believe that the "development" model--at least as I understand it--is the most suitable one for the future of any society of the present. Moreover, I do not find much that is compelling in the steady-state, neo-traditional, counter-cultural, or future-shocked alternative images either. I believe that it is possible and responsible to imagine and work for the attainment of a future which seeks not the "limits" to growth, but the "transformation" of growth; not to recapture any golden past, but to invent a more human future; not to frighten and conform us into our "group," but to enable us to be more individually free and interactively loving.

What tripe that must seem to be! How naive or foolish or utopian!

I hope to show that it is none of that--that nothing could be more practical than the model of the future which I suggest.

Oh, it may not be desirable--that is a different matter. I am not here to sell you a glittering new future of hope. I only wish to show that "development" is not a desirable future model; that most anti-development models are not desirable or necessary either; and that at least one positive, life-enhancing alternative is available for your consideration.

If you don't like my image of the future, then create a better one of your own! Indeed, that is precisely what I hope to provoke you to do by the stunning failure of my audacious attempt.

Let me stress again that I believe that I was not asked to predict whether the world (or portions of it) would or would not actually "develop" in the future. Nor was I asked to predict whether the model of "development" would continue to predominate as a favorite image of the future. Rather, I believe that I was asked to ponder the question whether or not the development model was "necessary" and "valid" as an image of the future. Assuming that "necessary" and "valid" here mean "desirable," in my paper I reply that the development model is not desirable for the future, and offer a model that I personally think is more desirable and also possible.

I make no claims that the future I imagine will actually come to pass, however. It is an image, a model, a "dialogue focuser" (to use Robert Theobald's phrase), a social goal. It is not a "Blueprint"--blueprints and ironclad plans are the last thing we need. But compelling visions--that is something else.

Not utopia, though--not in the sense of the ideal, impossible dream-world of Nowhere. Not dystopia--the horrifying world of so much science fiction and fiction science of the present. But eutopia--the image of a feasible, desirable place (and time) which is significantly different from--and better than--the present or the past.

That is why I entitle my paper, "Neither There nor Then."

THE GREAT IMBALANCE

By Maurice Guérnier
Economist

On the morrow of the Second World War, four major phenomena marked a decisive turning point in the history of the human race:

the atomic explosion, which gave rise to super-powers with the capacity to annihilate the planet; the political explosion, which brought a new world, the Third World, into existence; the explosion in production, which is widening the abyss between the industrialized countries and the Third World; and the demographic explosion, which will double the world's population in the coming 35 years.

These four momentous developments, each following exponential curves of extreme gravity, will be responsible for imbalances that will imperil global peace. Of them, the most serious is the Third World's population growth (which will account for 80 percent of the earth's population by 2000 A.D.) because it is concentrated in the very regions with the weakest possibilities of increasing food supplies. Today, we can no longer ignore the spectre of malnutrition threatening several billion human beings.

Thus, we must urgently take measures in time to provide a new ethic and a true world strategy by which these imbalances can be reduced. My report attempts to point out the principle lines of such a possible strategy.

First line:

The capitalist-socialist civilization -- already under fire -- can no longer serve the Third World countries as a development model. We ~~must~~ disavow a world conforming to a universal industrial civilization.

Second line:

The world is composed of ten Great Communities, each one of which must formulate its own "civilization project:"

North America, Europe, USSR, Japan

Latin America, Black Africa, Middle East, India, Southeast Asia,
China

These Great Communities must each provide a framework for its civilization and authentic growth which no longer follows the Western pattern.

Third Line:

A vast program of cooperation must be hammered out between the industrial communities and those of the Third World, because only the former have the industrial capacity to supply the latter with the equipment indispensable to any real development.

The report demonstrates how these three principle pillars of a new ethic can make it possible to lessen progressively the sharp imbalances existing today.

Demographic imbalance: each Community would grasp its global responsibilities more clearly than would the small nations individually. It would realize, as the Chinese have done, that overwhelming demographic pressures are a total hindrance to development.

Food imbalance: in formulating its civilization project, each Community would structure its rural life along the lines of the "Village Communities;" thus, each group would introduce advanced agricultural regulations and an improved administration of public health, education and training. This action would also resolve the problem of today's cultural imbalances.

Lastly, political imbalance will cease to exist since negotiations will no longer be carried out on a nation-to-nation basis but rather between the Communities. This will forestall the predominance of nationalistic and imperialistic elements.

Will the imbalance in life levels continue?

Certainly, differences in the GNP will persist throughout the world; but

how important will they be if life styles are totally different, and the quality of life varying from one Community to another will no longer be measured by statistics but rather by the human value every man attributes to them?

[The following text is extremely faint and illegible due to low contrast and scan quality. It appears to be a multi-paragraph document.]

TECHNICS AND HUMAN CULTURE

By Lewis Mumford
Visiting Institute Professor
Massachusetts Institute of Technology

SYNOPSIS

The attempt to describe the relation of technics to human culture has been handicapped by three ideological errors. First, the archaeological misreading of stratification, which treats successive material stages as discontinuous entities and ignores the cumulative historic contributions that underlie all succeeding cultures. Second, the anthropological fixation which attributes man's massive cerebral development mainly to a single organ of the body, the hand, and to a single kind of artifact, the tool or the weapon. Third, the illusion that any part of material culture can be adequately interpreted without reference to the subjective activities -- rational and irrational -- that underlie all daily life. This paper holds that technics is an expression of the entire human organism and that, organically speaking, the seemingly most advanced phases of modern technics, automation and cybernetics, correspond to the most primitive organic functions, those of the neural reflexes, the endocrines, etc. From the beginning, the inventions of the mind -- symbols, mathematical notations and, above all, language -- as pure technological feats outpaced man's crude physical artifacts until mind was brought to bear on their design and social utilization. What unites technics with every other manifestation of culture is man's special capacity to endure repetitive activities and to enjoy them originally in the rhythmic forms of ritual, dance, music and communal work. Man's partial control of his own bodily and mental processes necessarily preceded the discoveries and inventions that made it possible to increase his food supply and transform the environment. Once the consequences of this interpretation are understood, a fresh approach can be made to the pressing problem of modern civilization: how to subordinate corporate automation to human autonomy.

REFLECTIONS ON THE RELATIONSHIP BETWEEN MAN AND SOCIETY

By William Simon
Director,
Institute for Juvenile Research

In substance, Simon's paper on the relationship between man and society maintains that social conflict cannot be understood in terms of abstract conceptions of man and society, but in terms of concrete social contexts and specific human experiences.

He begins with a question: why must man survive? and examines the traditional answers given by Christian theology on the one side, and by the scientific-technological ethos of industrial society on the other; salvation for the religious, and historical validation for the secular. In pre-industrial and industrial societies, today's decisions and actions are justified in terms of some future rewards. Emerging forms of the post-industrial society (Simon defines the future as post-industrial and links this with a shift from material deprivation and marginal survival to potential affluence) have called much of these conceptions into question, and the aspirations that once served men as guiding stars fail increasingly as justifying existential realities. Affluence engenders a devaluation of the future: post-industrial societies must live with a strong sense of the present.

Simon suggests that the future must be considered a social invention that cannot be taken for granted. We must learn to invest our models of the future with a concern for the future as a variable that will change as the conditions of social life change. We must limit our expectations of human options and face different time perspectives. This brings Simon back to his initial question: why must man survive in conditions that we can recognize as comparable to our own? The sense of impermanence which affects our society calls the permanence of man into question; and we may have to face the fact that as social order changes, so does man.

The will to colonize the future is not only the desire to organize ideologically our response to the future by perpetuating existing institutional forms but to perpetuate a limited conception of man himself. We learn to accept the realities of protean society, but we consider man as a constant reality. Here is the danger of socio-morphic

thinking; it leads us to see man not as a constantly changing end product of a continuing process, but as a creature whose constitution organizes and constrains that process.

Our models of the future must incorporate man as a variable.

What appears essential to most futurist thinking is a universal model of man with a complex of needs, abilities and disabilities that sets limits to alternative forms of social life. But those who offer us such a model in search of an optimum development rarely ask; optimum for what? In elaborating some of the most important elements shaping post-industrial society, Simon points out the dramatic nature of impending change, and comments on the changing social organization; the decline in role stereo-typing; the lessening importance of the family; the trend towards personal motivations; the erosion of mandated imperatives; and the trend toward a global society. In these alternative versions of man, he examines the man-society conflict. As man is drawn more directly into global systems, his personal realities take precedence over social realities, and the need to organize his life in personal terms increases. The conclusion is that man's capacity for self-regulation without coercion from the family, religion, race and nationality, is not only possible but necessary to a post-industrial, global society.

WORLD MODELS AND POLICY MAKING

By Craig Sinclair
International Institute for the
Management of Technology

This paper analyses world models and their utility to policy-makers, and poses different questions about them:

- Are they capable of reducing complex realities?
- Are the mathematical models of our scientific culture capable of supplanting the older ones (more intuitive?)

When we ask these questions we must never forget that we are dealing with a clash of cultures and that we stand at a turning point in cultural development, in search of new values, new languages and new methods of expressing them.

The paper then studies the predictive models which should (according to Heilbronner):

- a) Allow the formulation of higher level hypothesis
- b) establish useful categories of generalisation (taxonomy) which
- c) which need an historical perspective

Then the paper describes some traditional types of the decision-making process and tries to see if the output of the present world models can be fitted to them.

According to Scott, the decision-making process consists of:

- a) a search for goals
- b) formulation of objectives
- c) selection of alternative strategies to achieve a formulation of objectives
- d) an evaluation of outcomes

Current world models operate in just the reverse manner: outcomes issue ineluctably from the existing policies and this process is defended by an appeal for decisions concerning national and international goals.

Therefore, on one side there are rational modellers, and on the other political decision-makers who decide the goals. This is the main problem of democratic government, which has been faced by economists with cost-benefits analysis (that does not solve the problem, but only makes the decision more explicit.)

Behaviour, which is not considered by computer models, is another problem facing effective decision-making.

The decision-making process can then be listed as:

- a) the determination of objectives
- b) the definition of the problems that must be solved to achieve these objectives

- c) the search for various solutions that might be offered to these problems
- d) the determination of the best or more acceptable solutions
- e) securing agreement that such solutions should be implemented
- f) the preparation and issue of instructions for carrying out the solutions
- g) the execution of these solutions

Decision-makers require improved methods to achieve these steps.

The paper then presents a classification of the different viewpoints on the problem:

- a) a normative attitude
- b) the causal, Marxist approach
- c) the technocratic solution
- d) the managerial approach.

The integration of these approaches is advocated, but no solutions are offered, because what is important is the nature and the kind of the questions posed.

To conclude: the decision-making process is ultimately political in nature, and "what is important about political views is as much the way in which they are held as what is held".

As explained in the foreword no abstract is present of Bertrand de Jouvenel's introduction nor John McHale's critical review, both published in Human Futures.

CONFERENCE PROCEDURE

PANEL

POST-INDUSTRIAL SOCIETY IN THE
DEVELOPING COUNTRIES

By Madhur Srinivas Iyengar
Government Service, India

The evolution of society has been assumed to be unidirectional - from savagery to civilization, from primitive tribal to agricultural to industrial and now to post-industrial. Implicit in all these is the assumption that societies cannot transform from the lower to higher forms without passing through the intermediary stages. Yet we have the example of transformation of tribal societies to industrial societies in several parts of India. The Khasis of Meghalaya, the Nagas of Nagaland and the tribes of Arunachal Pradesh have skipped thousands of years. Instead of feuding with their neighbouring tribes and ravaging the villages of their adversaries, they have today a democratic form of government where their representatives in the local Assemblies are elected by universal franchise. Their sons and daughters go to colleges and become lawyers and doctors. Their leadership is no longer confined to their tribes. Its impact is also felt on the rest of the country. For instance

the Deputy Speaker of the Indian Parliament hails from Meghalaya.

Yet when it comes to a transformation of an agricultural society to a modern society, we are not thinking in terms of a jump of a thousand year but only as a process of retracing all the steps of the traditional pattern of development!

"Failure of Nerve"

We have before us the vistas of a post-industrial age. We refuse to read these markings on the wall and like the proverbial ostrich bury our heads in sand. It may well be that the people who are at the helm of affairs in the countries of the South still live by a post-figurative set of values. They are the products of the nineteenth century Industrial Revolution. Their thoughts and action are very much conditioned by the pre-war London School of Economics concepts and the Fabian movement. They have not fully grasped the significance of the Electronic Revolution. Their conception of the future is essentially one in which change is incorporated in what Margret Meade terms "a deeper changelessness"¹. The planners know what a computer is and even surreptitiously use it but they think that it has no immediate large scale application. They

have watched the sources of power, the means of communication, the landing of man on the moon, the fundamental information of life and death, in fact the outline of change but they are so over-whelmed with the bureaucratic set up and the magnitude of the problem that they tend to follow a policy of Laissez Faire.

Struggling to free themselves from the stiffling past-orientation of previous societies, the politicians and planners focus heavily on the present. This means in practice, that their planning deals with futures, near at hand. In some of these countries, even the so-called Five Year Plans, in practice, have tended to be a year to year exercise. In Arthur Clark's phrase, theirs is a case both of "FAILURE OF NERVE" and "FAILURE OF IMAGINATION".²

Majority of the people in the countries of the South still live in the villages. Their ties with the community are still strong and not easily severed; although food and shelter are no longer communal enterprises. No one grows fat or starves except perhaps during severe drought. Play, art, ritual, ceremony and the spinning are still largely rooted in folk and religious cultures which developed irrationally through the ages in response to human needs. Although the Industrial Revolution shook the village

to its foundation, its basic fabric still remains. Into this environment the compulsion of market economy is being introduced. Men are forced to seek jobs in factories or cities and swell the slums. The land is being ravaged, the forests are being denuded, rivers are being polluted and men uprooted from their environment and turned into economic slaves to become cogs in the wheel. They are dominated by the most impersonal of masters - Money. The villager is getting alienated from himself and his community. He is forced to migrate to the city or factory and become a wage-earner or quite often a beggar. His independence is replaced by servility and submission to authority. The industry is not interested in his creative faculties - his sense of beauty and perception, his craftsmanship, his sense of design and rhythm and music, his boldness, courage, leadership but only in using him as a mere beast of burden.

Should the State make a non-human use of human being? What is the way out? Have the countries of the South any option? Yes, they have. Rather than retrace the patterns of traditional development they should "take off" higher on the technological scale with a much faster integrative role than the more established

areas. They should attempt to go from pre-industrial society forms to post-industrial in one transformative stage of development.

Automation and Cybernation

The developing countries should stop thinking in terms of mechanical lines of industrial organization of the eighteenth and nineteenth century. They should stop thinking of setting up industries which are labour intensive and rather think in terms of cybernation and automation. They should not shy away from it. For cybernation produces goods within reach of the common man with less inputs than the mechanical means of production. Productivity is boosted at least by a ratio of four or five to one. The older methods of production become more efficient as they grow larger in size and become more specialized. Automation is the other way round. As Marshall McLuhan says³:

"A new automatic machine for making automobile tailpieces is about the size of two or three office desks. The computer control panel is about the size of a lectern. It has in it no dies, no fixtures, no setting of any kind, but rather certain general purpose things like grippers, benders and advancers. On this machine starting with lengths of ordinary pipe, it is possible to make eighty different kinds of tailpieces in succession, as rapidly, as easily, and as cheaply as it is to make eighty of the same kind. And the characteristic of

electric automation is all in this direction of return of the general-purpose handicraft flexibility that our own hand possess. The programming can now include endless changes of program. It is the electric feed-back, or dialogue pattern of the automatic and computer-programmed 'machine' that makes it off from the older mechanical principles of one-way movement".

It is in the direction of scale-down and return of the general-purpose handicraft flexibility, and, therefore, well-suited for the developing countries. Thought of cybernation and automation brings in the spectre of unemployment and joblessness. But have the developing countries any options? Their present methods of increasing production by setting up traditional patterns of industries have not solved the employment problem. During the last decade, unemployment in India has increased from about 19 million to 35 millions. The number of educated unemployed has increased from 1.5 million in 1969 to 3.3 million in 1972. The crisis is deepening in the developing countries and the rise in per capita income is not able to keep pace with increase in population. The UN year book of National account statistics, 1971, reports, that between the period 1960-70 when the per capita income of the developed countries had increased from \$ 1360 to \$ 2660 that in the developing countries it was from \$ 130 to \$ 210 only or

merely an increase of 60%. The rate of growth in the developing countries was 5.2 per cent compared with 5.1 per cent for the developed countries, but when increase in population is also taken into account the overall growth rate was only 2.5 as against 4% for the developed countries. If production is made even more labour intensive, it will only accentuate the situation further. Let us not forget that manual labour is only 1/5 H.P. and it has no value. Making man do worse what a machine can do better does neither bring in self fulfilment nor a sense of involvement. It can only result in alienation.

Society of the "Unemployed"

Why should the developing countries attempt to solve unemployment? Does not the trend elsewhere indicate that people in the post-industrial era will also be 'unemployed' though in a different sense? The majority of the people in the developing countries are 'unemployed' or partially employed in the economic sense, and to a good number of them, work is not the central life of interest. The principle of rationality and efficiency and the notion of time as money, that is, as a scarce commodity and socially significant unit, does not exist. These are the very manifestations of a post-industrial society. For with the electronic age, wealth and work become information factors and totally

new structures are needed to cope with the new situation. For wealth will be produced not through industrial activity but through transformation of knowledge based on human resources into many forms of physical and social activities. The main problem of the future will be the construction of a social system based on the principle not of employment but rather full unemployment and as Nizer Calder wrote⁴, "Work was invention, which can be dated to the invention of agriculture..... Now, with the beginning of automation, we have to anticipate a time when we must disinvent work and rid our minds of the inculcated habit".

The developing countries should, therefore, directly evolve into a "learning society" without passing through the conventional stage of industrialization. This they could do by adopting sophisticated technology and not 'intermediate technology' as the following examples illustrate:

A thermionic valve is more costly than a transistor, which is a generation ahead of the former. A transistor is more costly than the integrated circuit which is again a generation ahead of the former. The integrated electronic component, being another generation ahead, would be still less costly. It is, therefore, prudent to adopt the integrated electronic component rather than begin with the thermionic valve.

The new "composite material" made from tiny boron crystal fibres embedded in a plastic resin is twice as strong and two and half times as stiff as aluminium and yet weighs 25 per cent less and should be less expensive. Transparent materials as strong as steel, now provide an entirely new concept for structurals. Reinforced plastic mortar promises to replace galvanised iron pipes for water supply and they are lighter and cheaper. Composite materials can be designed in a variety of ways to meet specific use. The meaning of this shift from materials ready made by nature to man-made - utilizing elements which were hitherto mere chemical curiosities - has to be fully understood, for they make the linear expansion in steel and aluminium productions, redundant.

In fact where the countries of the South have adopted sophisticated technology they have already achieved spectacular results as is illustrated by the "Green Revolution". The adoption of the high yielding varieties of wheat have converted Mexico's wheat shortage into an exportable surplus, Pakistan from near famine to self-sufficiency and promises to do the same in India. Prior to the "Green Revolution" the all time high in wheat production in India was roughly 12 million metric tons. Today it promises to touch 30 million. The same is happening to maize and rice. For making

the process a success, it was not only necessary to use genetic manipulation in the breeding of the high yielding varieties and bring in the concept of inputs including fertilizers, pesticides, farm machinery and construction of irrigation channels and roads, but also convince the illiterate farmer of its efficacy so that not only he adopted himself but also help his neighbours by himself acting as an extension worker.

The Green Revolution has to be extended to the vast areas of the developing countries including other crops, if the fight against hunger is to be won. This has also to be followed by initiating researches in producing food from the non-conventional sources like fermentation of hydrocarbons, protein from algae, etc., for, because of increase in population, even the food produced by the Green Revolution will not be enough to meet the demand by the year 2000. All this calls for sophistication.

What type of production patterns the countries of the South should adopt? They should aim at technology which recycles waste, minimizes on the use of the fast depleting resources, and does not become counter-productive. It should be directed to meeting the biological needs and also, ^{at} improving the quality of life, without ravaging the environment. It should not be market determined and consumer based but should be able to restore to man his

dignity, his creativity and his true nature which is expressed in loving and trusting his own kind, developing, growing, living fully as he can in unison with nature and his surroundings. This would mean employing sophisticated parameters for deliberately choosing machines, process techniques and systems from a variety of alternatives. It would also mean bringing in a Human Environment System approach of the type envisaged by McHale in which technology interacts with the psychological and biophysical components of the human system which in turn interacts ^{with} ~~on~~ the atmosphere, terrestrial and ocean components of the environ system⁵.

Modernized Rural Communes

Urban population in the poor countries now totalling 600 million, are expected to increase to 3 billions over the next three decades - a 500 per cent increase in scarcely a generation⁶.

If the present trend continues, the rural societies will be transformed to urban societies. The population of large cities in Latin America is doubling every 14 years⁶. The population of Calcutta is projected to cross 40-50 million by the turn of the century. Urbanization is moving much faster than it did in the countries of the West, and the majority of mankind may

be living in slums and shanty-towns by the end of the century. What is worse, the developing countries would have over-strained their system in vainly trying to solve the urban problems of housing, roads and services.

Yet we know that cities are dying and except perhaps for certain limited applications, they are no longer necessary. The communication satellites have provided within a single generation, at least in the more developed countries, a new window to the home - the TV set, which is no longer a luxury but a necessity. During the next decade the home will be invaded by a general purpose console comprising of TV screen, camera, microphone, computer keyboard and hand copy read-out. These open up a new vista of almost instant person to person communication with any part of the world, making travel for business redundant. Arthur Clark even envisages the establishment of self-contained communities quite independent of agriculture anywhere on the planet that we wish; individual homes may become closed ecological systems producing all their food and other basic requirements indefinitely⁷.

The communication explosion would change completely our concepts of the structure of the society. We are

already in the development phases of successive technological revolutions in which refined electronic means have displaced most of the present time energy and space relationships which were the guidelines of our thinking. Urbanization may be viewed as only one of a number of possible strategies for an overall pattern of living which goes on through the life cycle in many widely separated locations.

Rather than spend their resources in accelerating the trends towards urbanization, the countries of the South should improve their communication network and modernize their villages. The village should have all the sophisticated audio-visual facilities to make it "idyllic". The housing and sanitation and other living conditions should be improved; conditions created to make living creative and worthwhile; the present isolation of individuals and communities in rural areas should be broken and a sense of participation in a wider national and global environment, instilled. At present the administration is very much urban-oriented in their thinking and action. The village and the rural areas receive the lowest priority in their planning. All this should change, for in the society of the future people will, more and more, live in small communes very much near nature, far from the madding crowds. This trend is already evident in the new life style

of the youth of the developed countries. In high schools and technical colleges across France, students are demanding special lectures on agriculture and animal husbandry. Already they have set up over 300 rural communes. Each commune comprises between six and thirty members on an average. Not all are hippies. They are an assortment of engineers, architects and journalists who occupy abandoned houses in villages, grow their own vegetables and work in crafts to meet their daily needs.

If production is to be cybernated and automated and living facilitated in small communes near nature, our concept of development has also to change drastically. In the West it was logical for the industrial society to evolve structural pattern in their living and thinking which simulated the factory. Assemble people (workers) in a centralized city (factory); generate power in a super power station and distribute through extra high voltage transmission lines; collect sewage at one central point from long distances and process them at a central place, collect commodities at central places (super markets) and sell them; assemble children at central place and teach them. It is, however, illogical for the predominantly rural developing countries to view development also in terms of centralization.

Education for the "Ear-oriented Society"

The developing countries are attempting to transform what McLuhan calls an ear-oriented (tribal) society into a vision-oriented (modern) society when the advanced countries are again reverting to an aural form of society. The developments in communication are causing an "implosion" forcing people back together in a tribal unit. This is in contradiction to the visual-sense dominated society based on print which caused an "explosion" - breaking society up into categories - "jobs", "prices", "department", "specialists", "nations". The developing countries should understand the compulsion of the "media" and adopt a pattern which will quickly transform their societies into post-industrial societies.

The majority of people in the developing countries are "illiterate". They are more trained to receiving their messages through their eyes and ears. In the post-industrial society too people will be "illiterate". Their reading and writing will be more and more replaced by seeing and listening. Indeed Toffler quotes Joseph Naughton, a mathematician and computer specialist at the University of Pittsburgh, having suggested a system "that would store a consumers' profile - data about his occupation and interests - in a central computer. Machine would then

scan newspapers, magazines, video-tapes, films and other material, match them against the individual profile"⁸ and instantly display it on the TV transmitters at his own desk

Yet the pattern of education followed in the developing countries is print-oriented which is completely alien to them. Rather than translate and print books in several regional languages and set up a whole system of education on traditional patterns, with inadequate teachers and inadequate resources to import education based on impersonal outdated curriculum with the student merely being passive (and most often bored) listeners, would it not be more appropriate, less time consuming and less costly for the developing countries to offer education through TV and education satellite system coupled with other computer-assisted teaching aids which transcend the language barriers and which have emotional appeal? Motion pictures and TV can present lectures of good teachers in place of lectures of the poor teachers. A laboratory experiment performed under ideal conditions can be filmed and watched by several thousands replacing the one performed under imperfect conditions than can be seen only by a dozen at a time. This would be a far off cry from the present system of education with their tedium of geared inflexible curriculum, attendance in schools at fixed times, group instructions, group competition and the emphasis on marks and grades.

It is only through such systems that within our life time education can be made universal. Education would then be liberated from its present vocation of catering to meritocracy and elitism and would be fully directed at freeing the pupil's mind of all prejudices, improve his creative faculty and judgement, introduce him to the dialogues about the common good and prepare him to a life of learning.

But can the developing countries afford to have this new system of education? Will they have the financial means? Despite the difficulties of costly installations, centralised control over the educational system, and close co-ordination between the various agencies, TV in our home has developed remarkably well, as an educational aid. More than 50 countries make use of TV for teaching. In India an initial study conducted by UNESCO shows that a satellite system is the only economic way of achieving national goals in in-school and out-of-school education, and meeting the country's gigantic telecommunication needs. Using the conventional system, All India Radio does not hope to cover more than 10 per cent of the area and 25 per cent of the population, by 1981. But through a satellite system all the Indian villages can have a two hour TV programmes

and the cost involved would be equal to the cost of three supersonic air-crafts. In monetary terms, just \$ 160 million. The satellite itself will be a mere \$ 5 million. The rocket launcher not more than \$ 10 million and the annual programme production would be only \$ 5 million. India has already entered into an agreement with NASA for a two hour experimental television instruction programmes for one year through their ATS-F satellite. In the long run almost every minute broadcast from the INTELST might cost slightly over \$ 13,000 but the total input for this might be less than the inputs required to train the 69 per cent of the 533 million people who are illiterate. For instance, in 1966-67 India spent \$ 904 million in teaching 74 million students. The Fourth Plan target for educating the 96.4 million students is \$ 1164 million. But this leaves out millions of men and women who will never have a chance to go to school.

All this calls for radical transformation in our present day organizational structure of our educational system. Education need no longer be imparted only at school. A person can educate himself at home assisted by computer - aided education, electronic video recordings, holography and other technical aids. If learning is a life time process, there is no justification for forcing thousands to attend school full time. As Toffler suggests⁸

new styles of schools, like, classes with several teachers and one student; classes with several teachers and groups of students; students organized into task forces for a project - all these and their permeabilities will need to be employed. Teaching need not be organized around fixed disciplines like Chemistry, Physics or Botany but around stages of human life cycles or around technology of the future. Curriculum should include not only data-oriented courses but also future oriented behavioural skills.

Life Style and Human Values

In the post-industrial society the present day structures and institutions of the industrial society would no longer be relevant. The decline of economic self-interest and possession, the collapse of heirarchy and bureaucracy, the errosion of attachment to place or position, the need for sharing of amenities of life; all would usher in a new social order. The individual will have the freedom to choose the personal goal or life style that he desires without being pressurised by the State. He will not be subservient to the State but at the same time he will not be selfish. He will reject the whole concept of excellence and competitive merit and will have his own individuality. He will have the attributes of what Charles Reich chooses to call

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consciousness III .

Since technology would have taken care of the material needs, man would have ended his antagonism derived from scarcity and base his society on love for his fellow man. He would develop the aesthetic and spiritual side of his nature. The change in the life style for the countries of the South would be far easier than for the industrial societies. For man from the South is still very much rural. He has already a sense of detachment to material possessions strengthened not only by non-availability of consumer goods, but even more by his philosophic outlook, and a different ethical attitude. As McHale rightly points out: "Though pre-industrial, aspects of their 'value' emphasis - on non-coercive means, on co-operation rather than the competitive models, the retention of community and individual oriented services, etc. - give them a more specific orientation to the post-industrial rather than industrial type of society"⁵.

If this is so, are the countries of the South justified in setting up institutions and organizations of the Industrial Societies with their economic concern for growth and increase in GNP? Would it be prudent on their part to uproot the people from their villages and make them cogs in the wheel and instil in them self-interest, competitiveness, suspicion of others - all eighteenth and nineteenth century concepts of businessmen and work - and again transform them to the second stage of the corporate

State with the individual turned into an organization man and a salesman with the market and consumption taking full command? Would that not be suicidal? Would it rather not be better for these countries to utilize judiciously and prudently the 'hardware' that technology offers and pay much more attention than the Industrial West to restructure the 'soft ware' or social thinking and make it more meaningful and in tune with the future?

Planning for the Future

All this means that the countries of the South should not take socio-ethical decisions regarding human conditions in terms of what they can do - but in terms of what they choose to do, both individually and collectively. Their planning should not be geared to any specific set of fixed and preformed objective. It should rather be based on sets of options and alternative, taking into account all the aspects like, the socio-economic costs and benefits etc. They should have what Jantsch terms, Cybernatic Planning, i.e., Planning which does not set man apart from nature; and which assumes that systems - social systems, cities, industrial complexes and the like - are in permanent interaction with each other, with the earth, the air and energy resources and have to be continuously restructured to maintain the ecological balance and through it the freedom of man¹⁰.

This is a far off cry from the present system of planning in the developing countries - which is merely, an exercise in setting overall national targets in relation to the resources available and the constraints of finance, a programme to finance this investment and allocation of investment in both public and private sectors. The plan is not even 'operational'. That is there is no system to see that what is planned is achieved.

The organizational set up in the developing countries are also outdated. The set up is highly hierarchical in nature and typically bureaucratic in action. In this system information flows upward from the lowest in the chain to a node point, then sideward to a man occupying a niche at approximately the same level in the hierarchy, who in turn passes it downwards to the man who actually gets things going. The information thus moves several times up and down through vertical chain of command plus several sideways before action can be taken. This system is based on distrust and suspicion and therefore regulated by checks and counter-checks, rules and regulations and audit and pre-audit. It kills the incentive within the person in the organization and leads to inordinate delays. This system might have been ideal for solving routine problems in a society where change is slow. It can only lead to chaos in a fast moving society, for information has to be conveyed

instantly and decisions taken promptly. In such a society, neither bureaucracy nor hierarchy have any place.

As McHale points out even the advanced countries of the West are undergoing a painful "three-generation" transition into modern countries and are faced with severe dislocations and deterioration in their socio-economic structures. Many of their internal institutions are archaic and based on the eighteenth and nineteenth century concepts⁵. The law of obsolescence is overtaking them and the great question they are asking is how to live in and with a technological society and what restructuring has to be done to preserve the humanity of men and prevent a state of what Dennis Gabor calls "technology autonomous"?¹¹

When this is so, how far are the countries of the South justified in imitating these institutions and organizations in their urge for economic growth?

Can the countries of the South take a leap to the post-industrial society without undergoing what Toffler calls 'Future Shock'? Margret Meade, in New Lives for Old, while describing the success story of the Island of Manus, where within a single generation the people leaped from stone age into the twentieth century, makes the important point that, it is far more difficult for a primitive people to accept fragmentary crumbs of an industrial culture than it is for them to adopt a whole new way of life at once.

They can readily change from one whole pattern to another as we are witnessing also in the North Eastern Region of India. Therefore the shock will be less felt in the countries of the South than in the affluent countries in their leap to post-industrial society, provided the whole pattern of culture is adopted, and provided, the process of evolution itself is guided consciously.

Karl Mark said: "We don't want to anticipate the world dogmatically but to find the new world from the critique of the old".

Let the countries of the South find their own new world with the hindsight of the East and the West.

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THE NEW PRINCIPLE: SYMBIOSIS THANKS TO HETEROGENEITY;
THE OLD PRINCIPLE: UNITY BY SIMILARITIES.

By Magoroh Maruyama
Anthropologist

Americans and Europeans used to say: "Let's find a common ground"; or "Let's find similarities so that we can unite", as if differences would necessarily create conflicts. This kind of reasoning is a fallacy, and is obsolete. It stems from the Greek logic, and is a remnant of the paradigm of the physics of several centuries ago.

Science has shown us that the basic principle of biological and social processes is increase of heterogeneity, and what survives is the most symbiotic, not the biggest or the strongest. Symbiosis is possible thanks to heterogeneity. What we need is heterogenization and symbiotization. Similarities are no longer necessary. They may even retard our development. We need to make positive use of differences. We need to look symbiotic ways to combine differences. We do not "solve" any problems by looking for "universals" and ignoring or discarding the differences.

Take an example. There are differences between animals and plants. Animals convert oxygen into carbon dioxide. Plants do the opposite: they convert carbon dioxide into oxygen. Yet the animals and the plants not only get along together but they need each other because of their opposite activities.

The principle of heterogenization and symbiotization has been quite obvious to non-Westerners since the time immemorial. But the Westerners have only recently "discovered" this principle. The "discovery" occurred from two directions: (a) in several fields of science as a result of the application of mutual casual models (so-called negative and positive feedback loops); and (b) in social and political movements. The purpose of this paper is to discuss the principle of heterogenization and symbiotization.

Background

As several authors have pointed out (Boulding 1970; Gerlach 1971; Maruyama 1970), during the past decade we have seen an emergence and an increasing acceptance of a new type of logic in many segments of the American society. The hippy movement of the affluent youths, the ethnic movements of the oppressed minority groups, and the ecology movement which finds supporters among both the conservatives and the liberals in the middle-class, are all converging to a logic opposed to the traditional mainstream American logic.

<u>Traditional mainstream logic</u>	<u>Emerging logic</u>
unidirectional	mutualistic
uniformistic	heterogenistic
competitive	symbiotic
hierarchical	interactionist
quantitative	qualitative
classificational	relational
atomistic	contextual

The three segments of our society mentioned -- affluent youths, oppressed minority groups, and middle class -- did not arrive at this new logic for the same reason, nor they necessarily perceive one another to be converging to the same logic. The Black ghetto residents who were materially deprived, though not necessarily culturally, and who had to strive for material improvement of their life, tended to regard hippies as silly rich kids trying to go backward materially, and to consider pollution as rich people's problem. Conversely the hippies, though anti-establishment, did not necessarily have much insight into the nature of the type of oppression imposed upon the Black ghetto residents.

Therefore the convergence of these three segments of the society to a common logic is a result of mutually independent recognition, on the part of the three segments, of the inadequacy of the traditional mainstream logic.

This emerging logic is not only compatible with the most recent innovation in the logic of science, but also stood the test of survival and growth in the epistemological as well as the esthetical dimensions in many cultures. The emerging logic is both supermodern and very ancient.

Many types of mutualistic and pluralistic logics existed for centuries, mainly in Africa, East and Southeast Asia, among Eskimos and Aleuts, and in many of the tribes of Native Americans, but also from time to time in white cultures. To give some examples of the latter, there were the nominalists of the medieval Europe, the existentialist philosophers of the post-Kantian age, the Darwinists since a century, and electronic engineers using oscillators since around 1910. But the main-stream logic in the Greek-European-American tradition had been unidirectional, universalistic (homogenistic), hierarchical and monopolar (non-pluralistic).

This paper first discusses that the mutual causal model is a very recent innovation in the logic of science, then discusses the epistemological and esthetical aspects of mutualistic logics which has stood the test of time in many cultures.

The scientific basis.

During the Second World War, the application of the radar and the computer to the automatic control of anti-aircraft artillery-weapons prompted a rigorous and sophisticated study of feedback systems to reduce the error between the projectile and the target (Wiener 1949). This was the beginning of the study of many other types of feedback systems (von Foerster 1949-1953; Maruyama 1963; Buckley 1968; Milsum 1968; Waddington 1969 - 1971). Feedback systems are mutual causal systems.

The development in the study of feedback systems can be roughly divided into two phases. The dividing line, somewhat oversimplified, is around 1960. In the 1940's and 1950's the engineers and the biological scientists focused their attention mainly on deviation-counteracting feedback systems (so-called negative feedback systems) which were useful for automatic control of various engineering devices as well as automatic regulation in biological systems. During the same period, however, a small number of thinkers, for example the Swedish economist Gunnar Myrdal and the cultural psychiatrist Gregory Bateson, began to conceptualize theories of deviation-amplifying mutual causal processes (so-called positive feedback systems). Myrdal published his "American Dilemma" (1943) during the Second World War -- a study of economic

vicious circles in the American ghettos -- and his theory of the economy of materially poor countries (1957) after the War -- a study of economic vicious circles in materially poor countries and in international trade. He also emphasized the constructive use of deviation-amplifying mutual causal processes. For example, if the economy in a poor country is given an initial kick in the right direction, the small initial change can be amplified to produce an economic development disproportionately large as compared to the size of the initial kick.

But more detailed laboratory-type research on deviation-amplifying mutual causal processes lagged behind that of the study of deviation-counteracting mutual causal processes, and became formalized around 1960 (Ulam 1962, Braverman 196). Deviation-amplifying mutual causal processes can increase differentiation, grow structure and generate complexity (Maruyama 1962, 1963; Waddington 1969, 1970, 1971). They are found in the interaction of cells during the growth of the embryo into the adult, in the interspecific and intraspecific interaction in the evolutionary process, etc. The same principle can apply to the growth of a city, or to culture change (Buckley 1968).

For almost 2,500 years -- since the time of Anaximandros, Xenophanes and Anaxagoras, the traditional mainstream principle of "scientific" thinking was based on unidirectional causality. Though there had been scientists from time to time (Darwin 1857; Wright 1931; Tinbergen 1937; Spemann 1938) who used mutual causal models, the mutualistic logic did not enter the "mainstream" of the Western science until the study of feedback systems. As late as 1953 Hans Reichenbach, a leading philosopher of science of the time, declared that mutual causality was impossible (Reichenbach, 1956, p. 39). Consequently he could not explain evolution or steady growth of complexity in causalistic terms. He had to attribute such processes to "finality" rather than to causality.

On the other hand, evolution, growth and life has become causalistically explicable in the mutualistic logic: deviation-amplifying mutual causal processes can increase differentiation, complexity and structure; and deviation-counteracting mutual processes can maintain them.

It is not without reason that some people call mutual causal processes as "anti-entropic processes", "love principle", "agape" (Boulding, 1970) etc. In this context Shannon's theory may be called "death principle" (unrelated to Freud).

Since the "discovery" of the mutual causal logic in science (The "unscientific" cultures had known it much before), it has become scientifically clear that the general rule of the biological and social universe is increase of diversification, heterogeneity and symbiotization. What survives is not the strongest, but the most symbiotic.

We have been misguided, by the traditional mainstream "scientific" logic of unidirectional causality and by the model of classical physics, to believe that generalizability, universality, homogenization and competition are not only the rules of the universe but also the desirable goal of our society.

It was already many decades ago that the theory of relativity challenged the notion of substance, and the quantum mechanics questioned the principle of identity. The mutual causal logic can challenge the notion of substance and the principle of identity from another angle, and without the help of theory of relativity or quantum mechanics. It shows precisely how differentiation, growth and increase of complexity can take place, how heterogeneity can arise out of seeming homogeneity, and how new structures create themselves without a pre-designed blue print. This is a considerable challenge to the notion of permanence, homogeneity and universal validity, which are some of the consequences of the notions of substance and of identity.

Epistemological basis.

Several types of mutualistic logics have existed in many cultures for several thousand years. Mutualistic thinking is therefore not just unrealistic wishful dream of hippies, but has viability as these cultures have shown. As examples of mutualistic logics, let us discuss one of them: multielement mutualism of the Navajos.

The Navajo universe consists of mutual relations between several types of beings as well as between beings within the same type: humans, animals, supernaturals, ghosts and natural forces (Kluck-holm 1949; Maruyama 1967). Humans can manipulate supernatural and natural forces by using appropriate formulas, and these forces can influence humans; animals can influence people, and people can influence animals; etc. There is no hierarchy in terms of the direction of influences. Among humans, there were no hierarchical organizations before the white government made Navajos organize the tribal council and other organizational structures. There were no chiefs in the sense of political authority. Old men and women as well as people with experiences were sought out as advisers when occasions arose, but those who sought their advice did not have to obey them; they could ignore the advice or change the advisers. White people often mistook these advisers as chiefs or leaders.

No one, either humans or supernaturals, are perfect, omnipotent or omniscient. In fact, such concepts do not exist in the Navajo epistemology. There is not even the concept^{of} "good" and "evil". The Navajo concept closest to our "good" is "nice". Each of the supernaturals can be both beneficial and dangerous to humans, depending on the circumstances and the way humans behave toward them. Each medicineman has his limits of ability, and even the respected medicinemen "go dry" unless they know some harmful witchcraft. Talented speakers are pleasant to hear, but too much talking spoils its own beauty. Drinking is enjoyable. But too much drinking results in loss of reasoning power and in dangerous mistakes. There was no concept of punishment. The man who caused damage or killed someone was not punished but was made to repair the damage or to take care of the family of the dead man. If someone behaved against the usual custom, no one would prohibit him, but people felt sorry for him because some misfortune would certainly result from the misdeed due to the disturbed harmony in the universe.

The purpose of life is to maintain harmony and to enjoy beauty and pleasure. The Navajos live scattered over a wide area. But when a family shears wool, plants vegetables, harvest crops or builds a house, relatives and friends come from over a great distance to help, even though the concept

of "paid labor" is gradually changing this traditional pattern.

The cooperativeness of the Navajos is not based on a belief in the unity of society, on obedience to a supreme order, or on a centralized coordination. On the contrary, their cooperation stems from their respect for the individual. Their universe consists of informal interrelations between individuals and between clans. Even a child possesses his own livestock and is free to dispose of his own property in any way he wishes. Men and women are equal, and each person chooses his own way of doing things. For example, a husband may choose to own a horse and his wife may choose to own turquoise necklaces, or vice versa. When they travel together, one may ride his horse and the other may walk.

Epistemologically, Navajos may be considered to resemble the Nominalists in some ways. Like Swedes and Danes, Navajos judge each situation in its specific circumstances and do not think in terms of general principles or absolutes. Yet Navajos are not atomistic as some Nominalists were, because Navajos think in terms of harmony, relations and contexts, not in terms of unrelated individuals.

In order to maintain harmony with other beings in the universe, one must know the complex workings of these beings and their forces. Ignorance causes mistakes, and mistakes bring misfortune and illness. Therefore knowledge is virtue. Since the purpose of Navajo religion is to maintain harmony, knowledge is religious. There is no separation between science, religion, ethics and esthetics in the Navajo culture.

The ceremony called "sing" exemplifies this inseparability of science, religion, ethics, esthetics and even economics, fun, social activity and psychological outlet. A "sing" is called for when someone becomes ill. A usual sing takes three days to perform, but some may last nine days. A sing is an occasion for a large, enjoyable social gathering. People who hear that there will be a sing will come from a considerable distance. They contribute whatever food they can contribute: those whose crops were plenty bring more, and others less. But everybody can eat as much as he wants. There^{are} games, dances and other activities, though recently these extra activities are increasingly omitted.

For the patient, the feeling that so many people care for him is as much a part of the cure as the curing ceremony itself. The medicineman traces the source of illness to some mistakes in the maintenance of harmony, and performs corrective measures which require highly complex and precise knowledge and formulae, as well as artistic skills in singing, sand-painting etc.

An atmosphere of intense concentration dominates the ritual -- not a concentration which can be called solemnity, supplication or humility, but rather like a concentration of an engineer operating a complicated machine. Minutely prescribed details have to be followed. But just as engineers take a break during their work, moments of relaxation, even joking, often punctuate the Navajo rituals. If a medicineman-apprentice is present, he may make many mistakes in singing. This often causes good-natured laughter both on the part of the apprentice himself and the audience.

The sings are frequent. During the summer there are one or two sings every week within one's reach. Therefore a Navajo can find frequent sources of food, social contact and psychological outlet.

Esthetic basis

Esthetic principles vary from culture to culture. Some of the Islamic designs are characterized by intricate repetitions of minute details. The European Vitruvius principle also achieves its design unity by repetitions of similar elements. On the other hand, the Japanese gardens and flower arrangements avoid repetitions and redundancies, and create harmony of dissimilar elements. In Japan repetitiousness, whether in design, in poetry or in human behavior, is considered "kudo" (heavy, overdone, obnoxious) and is avoided. The contrary of "kudo" is "sappari" (fresh, clear), and is a very important consideration in the Japanese esthetics.

In China, however, we find both the principle of repetition and the principle of sappari. The Chinese architecture and decorations can be highly elaborate, repetitious and strong in color, and some of the ancient Chinese poems are quite profuse in extravagant adjectives,

while the traditional Chinese paintings as a whole have non-repetitious compositions.

Nor is the one or the other principle characteristic of exclusively Western or exclusively Eastern cultures. The Hopi design is elaborate, while much of the Swedish design is sappari.

There are also different basic numbers in different cultures. In Navajo, the basic number seems to be 4, particularly in songs. In Sioux, the basic numbers seem to be 4 and 6, corresponding to the four directions, with sky and earth sometimes included as two additional directions. The Japanese Ikebana (flower arrangement) is usually based on various principles of making a composition out of 3, 5, 7 or 9 different elements. Many Japanese designs use a triangle of unequal sides as the basic layout, often with secondary triangles added, which should be dissimilar from the main triangle, unlike the European architectural design in which the "subdominant" forms are supported to repeat the main form.

There are also cultural differences in the concept of a design object in relation to other objects. For example, in the Japanese architecture there has been, and there still is, a great concern in harmonizing the building with its surrounding environment. On the other hand, many of the American architects, particularly the urban architects, tend to regard the building mainly as an expression of its individuality.

The existence of these cultural differences in esthetic principles indicate that even in esthetics there are heterogenistic as well as homogenistic principles; and that harmony and beauty can be created by heterogeneity.

These considerations make us further ask ourselves questions like: (1) whether we can apply esthetic principles of heterogeneity to social hardware such as urban and regional planning; (2) whether we can devise over all esthetic meta-principles capable of combining several designs, some of which are based on homogenistic principles while some others are based on heterogenistic principles.

The answer to the first question cannot yet be given, because examples of such hardware have hardly been produced yet. There are numerous urban designs which include various buildings with different functions. But usually the philosophy of such designs is to bring these buildings to unity by means of some shared features, similar details, similar proportionality, etc. An urban area with an overall design with components based on different principles, or a building consisting of suites or rooms with contrasting philosophies, is yet to be created. A shopping center built with such an over-all consideration, or even a student dormitory consisting of rooms in different styles, would be very attractive and interesting.

The answer to the second question seems positive. There already exist some examples of such meta-principles. Kenzo Tange's Olympic Sports Building Complex (Art Harkins please include the drawing in the pre-conference volume) can be regarded as an example of such a meta-principle. The overall design is heterogeneous based on the principle of dynamic balance of flow of lines (which, in this case, coincide with the direction of movements of pedestrians), and is asymmetrical and non-redundant. If you take the components separately, some of them are homogeneous and redundant inside themselves, while other components are heterogeneous.

Such meta-principles have not yet been applied to urban planning. But in some cities there is an emergence of different cultural principles in architecture, which later can be used as components of an overall meta-design. For example in San Francisco the residents of Chinatown have designed and proposed some housing projects which have a high ratio of the number of occupants per square footage, and which will enable old-age persons to stay near younger generations. This is all in accordance with the Chinese culture. In another part of San Francisco, some Black architects designed houses which have a shower and bath facility directly attached to the large living room. This is congruent with the Black tradition in this country. The Black families in cities often receive migrants from rural areas. These new arrivals stay and sleep in the living room until they find a job and a place to live. The receiving family is able to express its hospitality by having a

bathroom attached to the living room.

At present, each community is acting independently in such an endeavor. But as our society moves toward increased heterogeneity, overall urban designs to anticipate, accommodate and symbiotize the heterogeneity become necessary and useful.

There are two ways the heterogenization may proceed: localization and interweaving. In localization, heterogeneity between localities increases, while each locality may remain or become homogeneous. In interweaving, heterogeneity in each locality increases, while the differences between localities decrease. At the present, localization is more conspicuous than interweaving. At the stage of localization, the meta-principles apply to inter-locality designs. In the next stage of our social heterogenization, interweaving may increase. At that stage the meta-principles will be needed for intra-locality designs and designs for individual buildings. We need to develop esthetic meta-principles of heterogenization and symbiotization of heterogeneity both for localization and interweaving.

Industrialization and heterogenization.

It is generally believed that industrialization and use of technology will homogenize the world. This is a fallacy, as Jack Shuman elaborates in his paper. As the technology advances, the life of people becomes more heterogenized. I need not duplicate Jack Shuman's discussion on heterogenization in technologically advanced countries. I would like to discuss, on the other hand, whether or not the industrialization of non-industrial countries will tend to make the world homogeneous.

Until recently, it was commonly assumed that the industrialization of the European and North American countries was closely related to the fact that these countries were Christian in religion and ethics. It was often proposed that somehow Christianization was necessary for the industrialization (or "modernization") of non-Christian countries.

Studies of recent social change in the world have shown that this assumption is a fallacy. Many countries in Africa, Middle East and Southeast Asia

have become industrialized while retaining their religion, ethics and traditional patterns of life. Japan and China are no longer "exceptions" as non-Christian industrial countries. Many cultures have even enhanced their traditions by new technological means. This not only indicates that industrialization can increase heterogenization, but also more importantly the fact that what technology does depends on the philosophy with which it is used. Once we realize this, it becomes clear that technology itself is not an evil. Technology can become an evil depending on the kind of philosophy with which it is used. We must re-examine our philosophy with which we use technology, instead of putting the blame on technology.

At the same time, the technology-importing countries need to become able to distinguish technology from the religion, philosophy and ideology of the country from which they import technology. Too often, the technology-importing countries are eager to initiate everything American, everything European or everything Russian, regardless of whether it is useless, impractical or destructive. Many Polynesians gave up their native food for canned food, to the detriment to their health. Many Japanese gave up their traditional, naturally ventilated house for a Western-structure house, which needs to be air-conditioned. The Western-style toilet collects and breeds flies on desert countries. These are material examples. The mental and spiritual damages resulting from the indiscriminant and unnecessary importation of religion, philosophy, ideology and ways of life from the industrialized countries can be much more harmful. If nothing else, it causes self-depreciation, feeling of inferiority, inadequacy and self-hate.

Heterogenization of the world is not only beneficial to each country locally, but also to other countries. It enriches the cultural resources of the world, provides niches for individuals who want to migrate into them, and supplies a wide range of patterns for social segments which want to practice interweaving. Furthermore, as S. Wright (1931) pointed out, it increases the speed of cultural evolution of mankind by providing cultural subgroups between which interbreeding can take place.

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WE ARE MOVING TOWARDS THE NEED FOR A GREAT TRANSFORMATION IN
MAN'S EVOLUTION; IN THIS PROCESS, ALL PEOPLE MUST TAKE PART,
TO DETERMINE THEIR OWN NEEDS AND TO DEVELOP THEIR OWN FULFILMENT.

By Eleonora Barbieri Masini
Responsible for the Social and Human
Forecasting Studies, Section, IRADES

Man today is coming to find himself in a particular situation which has its own special characteristics, different from those of any other historical period. He finds himself in a relation to his surroundings which has been building up through the stratification of time concurrently under the pressure of rapid change, which would seem to provide the premise for the future. It is our task to see and analyse, as far as possible, a determinant moment in the evolutionary curve of human development, the parameters of which are implicit in his biological, psychological and spiritual being and his evolution in time.

We must analyse the causes and significance of this situation and determine whether man himself, as an individual and social being, can bring his influence to bear on it and its consequences, and how. We wish, that is, to find a working hypothesis among the many proposed for man's survival and self-realisation. In this hypothesis, man is understood as a unique

being, different from any other, an integral person seeking his own growth within the context of his experiences burdened with contradictions, conflicts and choices open to him as an individual and member of society.

QUESTIONS

- 1) What has brought man to this situation?
- 2) Can he wield any influence on his situation?
- 3) How can he exert his influence?

ANALYSIS

Man would seem to be the entity who is at once determinant to the environment (understood as the totality of interrelations ranging from the psychological to the social and physical levels) and determined by it, since he is inserted into it and part of it. The environment is in constant transformation because it is a whole, no part of which is stable. Interactions occur, hence change. Varied are the levels and elements of an environment thus understood from the ideas which transform to the communications which accelerate the interactions and the resources which, if changed, modify them within the same interrelations.

But what has happened in time? How have these relations and interrelations become involved in shaping the environment in which man lives today, and which will partially condition his tomorrow?

First of all, there has been an upsurge in scientific and technological development, which weighs more and more heavily upon both man and environment. Resulting in specialisation, this development has diminished the range of analysis, corresponding thus to precise economic and productive directions and naturally inducing political consequences.

To this also respond the trends of the various disciplines which, in their efforts to establish relations with the other disciplines, are recognising today how incomplete their approach is to the interacting whole in motion. Thus anthropology, sociology and psychology.

The advent therefore of the scientific-technological process has undermined the concept of humanism interpreted as comprehension of man in his entirety, in the totality of his relations with the social environment and nature, and in the search for the motivation of these interrelations.

What have been developed instead are man's rational, empirical nature, science and knowledge of things and technology as the artifice of things. This has induced man to analyse and correlate on a purely rational basis, grasping the facts without exploring motivations, hence without perceiving the interrelations or attempting to find, through constant research, the sense of the various elements. Thus, he has never acquired that knowledge which goes beyond the correlation of elements and things.

At this point, the scientific-technological process

has become man's way of life. To be sure, it is the things created by that process that dominate the life of man who, in the end, submits to them. This is what Mumford calls the technological facilitators alien to man.

This means that man is ultimately overwhelmed by contradictions, doubts and imbalances between practical possibilities and thinking, between the individual's capacity to think and the conditions of social life, between specialisation in human activity and the universal vision of reality.

All this is now giving man to believe that his way of life, indeed the way of all society, is neither salubrious to his survival nor -- and much less -- to his growth. This fills him with doubts and anxieties; he is never satisfied, he is plagued by questions concerning himself and his choices; and this spurs him to cast about for some kind of help. Such a situation, its causes and significance involve all cultures to different degrees and in different ways, and will involve them more and more, joining all men together in a single drama, although perhaps at different times and under different circumstances.

At this point, can man recapture a humanism which will induce him to grasp the deep motivations of his being and his development?

He who has acquired knowledge of the things he needs to appease his hunger, to survive, to better his life and to relate

to others, should find a humanism which can utilize scientific and technological knowledge without being suffocated by it. This means that man should recognise himself as unique and integral, as a member of a whole if he is to find his place in his own history, in his particular moment of development. He should reach out to discover new, transformed needs and those future needs which go beyond what he can see today with his eyes, which will make it possible for him to recapture the human element, even at the cost of subjugating the process of science and technology.

This appears indeed difficult, both in the choices and means of harmonising the specialisations we have mentioned with the desire for "knowledge"; both in promoting dynamism and restoring balance; and both in preserving the plurality of cultures and recognising the growing imminence of his problems.

SUGGESTIONS FOR DIRECTIONS

Before anything, at this stage man should be aware of what is happening to him and what can befall him if he continues in this direction. He should know at what stage he has arrived in his evolution. This stage is indeed momentous, encompassing the terrifying thought that he may not be able to turn back and the fear that he cannot ensure his survival, not to speak of his self-fulfillment. Thus caught in a crisis, he should lose no time in heeding the message coming at him from all sides, and in inverting

his mentality totally. He must not continue along the trend-arc he has been describing until now, which has carried him far from a comprehension of his humanism. On the contrary, humanism is what he should search for -- the roots of human dignity, the emancipation from conditioning and the freedom to be a social creature. All this should occur in a reality which hitherto has borne him in other directions, toward emphasis on the economic element, the domination of the stronger over the weaker and the manipulation of human liberty.

He receives the message from his inner doubts, from the problems confronting him in his relations within his family, from the difficulties he encounters with other cultures and the difficulties of physical survival resulting from his growing consumption of natural resources.

In other terms, he must acquire an awareness of himself, of others and of his environment which will convince him to change his thinking in the way indicated. This will make him even more insecure toward himself and others, but this is a condition he must accept, however disturbing it may be and contrary to his natural instincts, because such insecurity inevitably derives from search. Indeed, man must find his needs and his values, he must re-discover himself at once as a physical, psychological, social and spiritual being in search of his motivations and his values. He must change and seek out what is original and creative within himself; no less must he seek out other men and

find the authentic community as the answer to his social being. He must recognise himself as a complete being, part of a developing whole in which nature and other human beings take part in a continuing dynamic of interrelationships, in continuous evolution. Social life is not at all external to him; indeed, he grows with others and in his relations with others. Nature is not external to man because he is part of it.

In changing his mentality, man must first of all recognise his own inner strength -- the sum total of his biological, psychological and spiritual factors, which can make him determinant -- that is man who chooses, not the man who is determined and chosen. In other words, he can determine and choose while recognising the consequences of his own actions and feeling himself inside this marvellous process of development rather than as an outside observer. That is why he cannot analyse "scientifically" but rather must participate. This is one of the avenues open to any and every man so that he can react against the innumerable conditionings to which he is subjected, and thus avoid passive surrender to the total situation dominated by the few to the detriment of the many.

Toward this goal, he should probe, if this is his purpose, with the means science offers him but fully aware of its limits. That is, he must "observe" again but as a participant, with the understanding that his life depends upon what he observes scientifically. He must rid himself of the impression that he is an external being, an impression which allowed him to believe that he was the master of nature and oftentimes of other men like

himself. This conviction has spurred him to conquer power and wealth but not happiness, and so intoxicated him that he has subverted both nature and his relations with other men. He must act with the conviction of being a part of the whole, in concert with his fellow-men, if his purpose is to act; he must not follow passively but rather utilise the enormous means at his disposal today, always fully aware of his inner strength. It is not a simple matter to acquire this sense of responsibility and participation, which must be stimulated in different ways -- by being the kind of person he makes of himself, by participating in public affairs, by responsibilities within the single groups which comprise the social body.

The other element is participation as a developing factor, characteristic of man's evolutionary moment, which we seem to recognise. It is becoming untenable for some men to evolve in one way and others in another, for some men to be educated and others not, for some to acquire affluence while others live in poverty, for some to lead and the rest to follow. If an inversion of the mentality is necessary, it must be shared by all in a continuous, ceaseless development. Here is the motivation for the other fundamental characteristic of mentality inversion: it cannot occur only once; it must be continuous, just as changes in needs, values and choices are continuous, and it must be dynamic to respond to the demands of the moment. Thus the essential function of communication which, by its very nature is an interactive process,

promoting participation. Thus the need for physical survival on the world level, which incurs the need for participation. Thus the need for participation on the existential level.

Now we come to the hypothesis which we wish to offer as a stimulus to the participants of the Conference. If it is true that man must be aware of the transformational moment in which he lives, and if this awareness must have its roots in participatory and dynamic bases as part of a whole in evolution, he must realise this not only on every physical, psychological and spiritual level but most of all -- and here is the hypothesis -- on the spiritual level, on the level of a comprehension of the whole and of everything that is different, in terms of something that can be understood and felt in common, even if it is not tangible. Man, then, must feel that he is joined together with everyone else, yet distinct because he is unique. This can only occur beyond the verifiable, yet it is the centre, the essence and meaning of human life.

Therefore, if man's evolutionary moment has a characteristic, this is signalled by the ever-more-evident need to find the elements of participation rather than of contrast, hence of symbiosis and not of counterposition on "essential" bases, on bases of a common quest for realisation, on bases not easily conquered without a contribution of man's whole being in the search for the "profound". This could be what some writers, Turner, for example, call the moment of "liminality", in other

words the moment of passage which retains connotations of the previous moment but has not yet completely acquired those of the ensuing moment, and the things accessory to the search for the common, the essential, are shed. If this hypothesis were verifiable, it would be beyond its connotation. It is a hypothesis which must be lived rather than verified, lived in the spirit of true communitas, in which progress is not individual because social life is not external to man but part of him.

This is not simply another evasion but, to the contrary, a greater commitment to responsibility, a greater and more serious search, to which man must contribute all those qualities which he has failed to develop over the past two centuries -- creativity, the non-rational and originality. This means a fundamental transformation of every man and all men in the common, diversified quest for a truly human realisation. Perhaps we are going toward a new era in man's evolution, the era of the essential, when what really matters will be the development of what man is rather than what he has, in which a step toward justice or a better order of social relations is more important than progress in science and technology. These sectors alone cannot offer any real human advancement.

This implies self-realisation in a precise historical moment marked by possibilities and difficulties identifiable through an analysis of existing factors rooted in a historically documented past. The past and present are the indicators of

of the future -- the concrete past and present understood both in the individual sense (biological, psychological and spiritual) and the social sense (structure and culture) oriented toward a future of realisation.

MAN'S IMPACT ON TECHNOLOGY, ALTERNATIVES TO EXISTING
TECHNOLOGIES; OLD TECHNOLOGIES REFORMED, INTERMEDIATE
TECHNOLOGIES, INNOVATIVE TECHNOLOGIES

By E.F. Schumacher
Economist

I hope you will bear with me if I confine my remarks to a few very simple matters. As we find that the trends of the modern world are increasingly getting us into trouble, we shall do well to look for causes before we look for remedies. One of the principal causes, it seems to me, is modern technology. It is distinguished by certain features which, from a humanistic point of view, must give rise to concern. These features have come to light particularly during the last twenty-five years.

The first of these is what I call giantism - a tendency for many things, organisations and "hardware", to become immensely big: far beyond the human scale. The second is complexity: everything tends to become ever more complex: so complicated, in fact, that we require immense armies of highly specialised people - people too specialised to be wise - just to keep things going. Thirdly, there is the trend of increasing capital intensity. To do anything at all, you need a great deal of capital; the "entrance fee" becomes higher and higher - whether it is a matter of newly-married people wanting a house or of newly-trained people wanting to engage in productive activity: you have to be able to command substantial capital resources even to start. The fourth distinguishing mark of modern technology is its violence: it engages in a battle with Nature, forgetting that if man should win this battle he would find himself on the losing side.

These four features of modern technology strike me as the most significant in relation to the present predicament of mankind.

The first three - giantism, complexity, and high capital cost, act, I suggest, as "principles of exclusion". They tend to exclude from normal participation the great majority of mankind. That is to say, if you want to do anything that fits into the modern pattern,

you must already be either rich or powerful. If you are neither rich nor powerful, all you can do is to hawk yourself around in the hope of finding a suitable "slot" the rich and powerful may have created for you; and if you cannot find such a "slot" you are useless.

We have heard a lot about multi-national corporations, which are going to rule us. I think all this offends the most basic human interests and requirements. Real people do not fit into "slots", and if they are called upon to "adapt themselves", they tend to become difficult. I suggest, therefore, that what we need to explore is the possibility of different technologies - to explore whether we cannot adapt technology to man, rather than expecting man to adapt to technology.

In connection with my work for the Third World, I speak of "intermediate technology": something very much better than what they are currently using, but at the same time very much smaller, simpler, more direct and straightforward than what we are using. Other people talk about "soft technology", basing themselves on the concept of non-violence. Others, again, talk about "adapted technology"; it all comes very much to the same thing: the development of something quite different from what current trends are producing, a new technology, a technology, you might say, "with a human face". This is the challenge: to use our best science and technical knowledge to bring things back to the human scale - "small is beautiful"-; to bring them back to their basic simplicity; to allow for small beginnings - small in terms of initial capital investment; and to strive for non-violence in all our dealings, particularly those with living nature around us. The question is: how can you get this done?

It can be done - but not by just talking about it. It is necessary to make a start, no matter how modest and small. While most of our scientists, economists, sociologists, and technologists are busying themselves with ever more brilliant methods to control the arrangement of the deckchairs on the Titanic, at least some of us ought to interest

ourselves in the construction and testing of lifeboats.

I shall give two examples of what I mean by "lifeboats". You do not need to be a highly learned agricultural expert to know that modern agriculture is on the wrong track. It has abandoned itself to total dependence on Arab oil, whereas it ought to be the great utiliser of solar energy. Most people know that there is something dangerously wrong, but they do not know how to put it right. In this situation it would seem reasonable for every land-owner with a sizeable estate to set aside a small part of his land on which to experiment with and test "organic" methods of farming. Such methods are being practiced by a minority of farmers in many countries, and they manage to obtain excellent yields and a decent livelihood without any inputs from the chemical industry, without using any poisonous substances on soil, plants, or animals, and without making any significant demands on non-renewable resources. For reasons of its own - not to be discussed here - agricultural science takes no notice of the existence of these farmers and gardeners, who manage cheerfully and prosperously without assistance from scientists. How much "organic" farming might achieve with their assistance is anybody's guess. Instead of simply waiting for a change of heart on the part of the academic, every good farmer ought to have his "lifeboat", that is to say, a small part of his farm on which he gains practical experience in farming methods and systems which are independent of Arab oil and have the merits of health, beauty and permanence.

In industry, enormous amounts of money are being spent on what we call R & D, research and development, and it all tends to promote greater size, greater complexity, greater capital-intensity, and greater violence. If only five percent of that money were spent on a "lifeboat", that is to say, in a search for smallness, simplicity, capital-cheapness, and non-violence, possibilities of a new "life-style" would come to light of which most people are totally unaware today.

I make these statements on the basis of practical work which we have been pursuing in England and many countries of the Third World for nearly ten years. The organisation set up for this purpose is called the "Intermediate Technology Development Group" and proceeds from the view that the rich man's technology is unsuitable when the problem is

to help poor people to help themselves. It is too big, too complex, too capital-intensive, and too violent. As the results of the Group's work are becoming available, they turn out to be of the greatest relevance also to the problems of the rich societies.

Our experience in this work has been interesting. Initially, you get nothing but abuse. The "economies of scale" is a sacred doctrine which must never be questioned, and the attitude of violence is endemic in modern society. However, it is possible to by-pass the resulting "immobilism". You then find that modern science and technical skill are quite equal to what is now the most urgent task, for rich and poor alike, namely, to create a new technology: initially, to serve merely as a lifeboat, but eventually to provide the basis for a new life-style, designed for health, beauty, and permanence, and accessible to all.

MAN AND SOCIETY; HUMAN NEEDS AND SOCIAL NEEDS,
TOWARDS "HARMONY BETWEEN MAN AND HIS NATURAL
CONTEXT AND BETWEEN MAN AND MEN", AND TOWARDS AN
UNDERSTANDING OF THE SOCIETY IN WHICH THE SYSTEM
IS DETERMINED BY MUTUAL INTERDEPENDENCIES

By Jan Strzelecki
Member, Institute of Philosophy
and Sociology

I shall begin by stating two problems. First, I am convinced that we must take a less optimistic view of man's desire for growth. Our inclination to put too much faith in this attitude may lead us to false perspectives and a kind of sentimentalism in our conception of human growth, its possibilities and obstacles. I believe that a reasonable consensus of opinion on this matter must be a fundamental condition if humanistically-oriented futures researchers want to arrive at a common understanding. Therefore, I propose that all of us give thought to the following:

Many of those who regard themselves as progressive harbor a mental and conceptual image of man as a creature endowed with unlimited possibilities for growth. According to this viewpoint, if man is left unhampered by external pressures, he will rise beyond his limitations like a sphere moving in space, unfettered by any kind of friction. Therefore, in both the liberal and socialist traditions, the main task of those concerned with human growth consists of removing the barriers to growth -- political constraints and pressures, economic burdens, etc. Once these problems are solved and man is liberated from all his shackles, he will grow as an individual and live happily until the end; and on his death-bed, he will hold in grateful memory all those who helped him in the fight for emancipation.

I am not calling this task into question, indeed I endorse it heartily. Nevertheless, I deplore the sort of sentimentality that puts the prospect into an unwarranted rosy light and creates the illusion that such a task is easy. If we wish to create new development dynamics with human growth as the main source, we must view the whole scene with more realism and empiricism. This approach was suggested about 30 years ago by Erich Fromm in his book THE FEAR OF FREEDOM, an outstanding study of modern

man's anxieties. Despite the striking changes which have occurred throughout the world in the meantime, Fromm's analysis is still valid. For many people, more freedom may mean more tension and anxiety, thereby generating more fear than inner tranquillity.

Maslow reached parallel conclusions in his analysis of the problems involved in self-realization. Having acquired some knowledge of his language and hierarchy of needs, I wish to remind you of his proposition that "the need for love and its values are far greater than higher needs and values most of the time and for most of the population." Higher needs -- meaning those for self-realization in Maslow's language -- can develop statistically only when the individual has satisfied various requirements for his security. For most persons, self-knowledge and self-improvement, two essential conditions of self-realization, are very difficult to achieve. Indeed, self-realization is impossible without great courage and a long struggle, and false optimism will result sooner or later in disillusionment, rage and the despair of hopelessness. Abraham Maslow eagerly champions human growth, but in his view -- and I am sure he is right -- it is not simply a pleasurable phenomenon everyone seeks for; on the contrary, it can be a dire traumatic experience. As Eleonora Barbieri Masini maintains, man is now undergoing a period of total transformation; I should like to add: "and he is terrified of it." This is the first problem I wish to discuss.

The second is somewhat related. Our organizing committee has asked me to launch a discussion on a type of society "in which the system is based on the natural interrelations among the component parts" -- a vast complicated problem which I choose to approach by way of a smaller issue because of its evident relation with the problematic of human growth. I propose to discuss the role of small groups and big organizations in fulfilling human demands encompassed in Maslow's hierarchy of needs. Discussions of this sort are obviously weighted with values; we should not attempt to avoid them but rather undertake them in a friendly, open-minded spirit, clear in our minds about our own values.

My proposition on the "proper" role of big and small organizations in a social system built around human growth as the central value, is controversial. For one thing, it assigns to the big organizations a far

greater share in the task of satisfying human, economic, security and other needs than is generally found acceptable by many of the new left, anarcho-communitarians. These fine, charming people are so suspicious of anything bigger than a peaceful village or more efficiently organized than a hippy commune that, in dread of inhuman bigness and the subhuman procedures of present-day polytechnostructures, they tend to reject many of modern civilization's achievements based on the efficiency of big organizations. On the other hand, in my proposition I give less prominence to the big organizations' help, guidance, leadership and punitive measures in the matter of self-realization than do generally their enthusiastic, unshakably loyal champions. Devotion is certainly a noble human virtue, but devotion to a big political body, accepted as a supreme source of spiritual enlightenment, will produce adverse results in the human sense. In my opinion, this statement has been amply proven by the political and social history of the 20th century. Therefore, in my very simple model of a "good society," self-realization comes under the responsibility of small, autonomous groups rather than the paternal supervision of agents representing any big organization. This is a value-laden option which I am outlining too briefly and simplistically; but I should be forgiven for this, since my instructions were only to initiate the discussion.

My "good society" consists of component parts -- individuals, small groups, big and small organizations -- living in natural interrelationships, much like the animals in Noah's Ark. These interrelationships are based on the following principles:

- a) human needs take precedence over organization-man needs;
- b) basic human needs -- work, health, shelter, education, law, etc. -- are mostly satisfied by a system of planned economy with added services;
- c) a planned economy does not signify that individuals must report on their probable self-realization activities to some official representative, and delay their personal development until approval is forthcoming;
- d) the activities of big organizations are like those of tame elephants: their power should serve human goals, not prescribe the separate goal of every individual human being;

- e) the activities of individuals and small groups, i.e. those intended to promote human self-realization, should be considered a common good and the primary value-achievement sphere of the whole system.

My five-point Utopia might strike some as absurd, nevertheless it formulates a very real problem. At futures research conferences, every conferee airs his special problem and tries to find some way of solving it; he is saying, in effect, that a good future is simply life without this problem. If I am wrong, then banish me forever from all futures research conferences. Indeed, I am doing that very same thing -- expounding my problem and maintaining that life on earth will be better and more oriented towards human growth if our societies can solve the questions I have stated; and I hope that our intellectuals, through their futures research think technologies, will contribute towards solving them, as well as others presented at this conference.

Thank you for your patience.

CONFERENCE PROCEDURE

GROUP 1

Alternative concepts of human development, including personal development as a complement or alternative to economic development: presentation of images and conceptualisations of persons whose development depends not only on food needs, etc. but also on communication, interpersonal relationships, etc.

HUMAN NEEDS IN THE COMING 70 YEARS

(Scenario to 2040 A.D.)

By Francesco Alberoni
Professor of sociology,
University of Trento

For a long-term forecast on the theme of human needs, as requested for this Conference, we must introduce five postulates which I shall list apodictically because of limited space.

The first postulate: human needs, like all human activities, develop along the dimension of the continuous for everything concerning daily life, and on the dimension of the discontinuous for everything concerning their composition and historical re-composition. This means that in a short period, needs appear to remain unchanged (as useful) and oppose ethics and values. If we follow man's life day by day from the beginning until today and trace certain needs -- such as food, shelter, affection, an absolute to believe in, the reproductive instinct and the urge to bequeath his cultural patrimony, etc. -- we shall find that the historical forms taken by these needs vary from age to age. They were different in the Greek city-state, in imperial Rome, in pre-Buddhist and Buddhist India. Every great religion, Christianity, Buddhism, Marxism, etc., redefines these needs.

The second postulate concerns scarcity. Although this assumption is not supported by everyone, nevertheless I am using it in this report. Given the kind of industrial development which has marked the past two centuries and the present trend toward population growth, unless something completely new crops up, we can only foresee the spectre of a relative and absolute scarcity.

The third postulate maintains that when any form of scarcity occurs, power becomes concentrated. When certain resources are in critically short supply, those who have the major share of it exploit their surplus to arrogate unto themselves the supplies of those who hold the minor share. In the hypothesis of a relative

or absolute scarcity, therefore, I can only forecast a concentration of power.

Fourth postulate: since the problem of scarcity affects the entire planet, we must assume further that it becomes also the problem of hegemony over the whole world. Thus, a question arises: who will decide what to produce, how to produce, how to distribute and among whom to distribute? States are the only historical entities to wield monopolistic power, and there is nothing to show that the States will not be the protagonists of this process. Which State, imperial or allied organisation, then, will end up administering the whole realm of production and distribution?

Fifth postulate: Generally, when we depart from a scarcity hypothesis, some will contend that technology is capable of eliminating that scarcity.

Once petroleum resources are exhausted, men will turn to solar and other kinds of energy. This is entirely true, according to this postulate; nevertheless, technology depends upon power, indeed it is a factor of power. To give an example: the technological problem of supplying water to the populations of the Sahel who are dying of thirst was actually solved some time ago; we have water desalination methods, supertankers, air bridges, network distribution by the military, and other means. But while such technologies would be readily applied if a drought were to affect the USA or Europe, none of them have been used to bring relief to the Sahel. Thus, technological benefits only widen the gap between those in power and those who have no power. The benefactors are primarily those who wield power and whose power is augmented by technological innovation. Hence, in the abstract sense, if technology solves the problem of scarcity, in the concrete sense, it only modifies the distribution of resources in favour of those who possess the most.

It seems to me, then, that these postulates are indispensable as a background to the needs problem and as a foundation for formulating a scenario of power, upon which appropriation and distribution depend. Thus, on a long-term range, we must redefine,

consensually or antagonistically, the standards of value of appropriation, distribution and fruition -- that is, needs -- in terms of powers

To do this, we face two alternatives. The first, more widely adopted, is to configure a hypothesis for the end of the period indicated, 70 years in our case, or in 2040 A. D. The other is to formulate a continuous scenario forecasting the various stages the world will experience between now and that date. Although this method is riskier because it can be confuted in the short or middle term, I prefer it because it allows for more exact verifications. Certainly, the arbitrary degree in such a scenario is extremely high, but this is a fact known to anyone concerned with forecasting.

POLITICAL SCENARIO

1970 - 1985

(The age of good administration)

- Concentration of international power in the hands of the USA and USSR.
Revolts in the decaying countries (Europe) and the expanding countries (Latin America, particularly Brazil).
- The countries rich in raw materials raise their prices, but the monopolistic power of technology becomes intensified, thus the exchange ratio is not altered.
- The leading nations propagate the ideology of administering scarce resources for the benefit of everyone.

1985 - 1990

(One hundred flowers and revolt)

- An explosion of permissiveness in US society. The 1960-70 generation rejects the traditional organisation of work. Thus, emancipatory ideologies spread to the developed countries, including the USSR, supporting a revolt movement.
- Australian autonomy.
- In India, the dualism between the developed and under-developed sectors collapses; the Chinese model is re-proposed.
- South America strives for autonomy. The possibility of Brazilian power leadership.
Revolt in Europe.

1990 - 2000

(The age of racial warfare)

- The American permissive experiment ends after a phase of anarchy. The political system stiffens; towards the end of the century, it takes on a quasi-totalitarian guise.
- Provoking a rupture between North and South, the revolt in Europe is suppressed by joint USA and USSR forces. China, allied with Europe, wages war on the USSR. Australia proclaims a sort of Monroe Doctrine, and joins in an alliance with South Africa. Revolts in Central Africa and the Philippines. Racial wars, wars of extermination. Revolt in India, where the Chinese model is crushed by Soviet aid. Brazil attempts to follow the Australian example; revolt in South America. The Middle East attempts blackmail with its now-scarce petroleum. The sheikdoms are overthrown. A war with Israel shatters the Russo-American entente. Israel is victorious;

the Arab power grab is defeated. Famine in North Africa. Japan launches a new imperialistic policy, supporting China in her conflict with the USSR, but she is blocked by Australia's "Monroe Doctrine."

2000 - 2010

(The age of autarchy)

- Europe is divided up between the USA and USSR (with Germany in the middle).

The Arab world makes peace with the dominating Israeli power. Central Africa, totally abandoned, suffers a fearful mortality rate.

China and Japan set up a joint defence bloc.

White Australian-South African power joins with the USA to exploit a defeated South Asia.

The new South American power is isolated.

One-third of India's population dies of hunger and disease.

2010 - 2020

(The age of racial blocs)

- The globe is divided into three blocs. The first, and most powerful, includes the USA, with which England is again allied, and the USSR, with Germany in the middle. This bloc is now allied with Southern white power -- Australia and South Africa -- which has expanded in Africa.
 - The second, Asian, bloc consists of China and Japan, which succeed in destroying the alliance between India and the USSR.
- South America constitutes the third -- but weak -- side of the triangle, and unites with part of Balkanised Europe (France, Spain, and Israel dominating the Arab countries).

2020 - 2030

A crisis in the model of American opulence and a consequent stiffening of the regime. The ideology of the administration of scarce resources. Intolerance of the South American powers, Rupture of its friendly relations with Israel. Possibility of a Russo-American attempt to solve the problem of hegemony through warfare: the Mediterranean to Russia, South America to the USA.

The Asian model develops a philosophy of poverty which spreads throughout Europe and the Mediterranean basin and even in the USA.

2030 - 2040

Ecological impoverishment becomes critical everywhere. The USA, USSR and the Southern white bloc propose a radical reorganisation of the world alternative to the Asian system, which has already achieved development and technological reconversion. Possibility of a world war if the conflict of the preceding decade has not occurred.

Violent pacifist and ecological movements, and the religious fracture between the elite and the rest of the population (as in the Christian epoch).

IDEOLOGIES AND NEEDS1970 - 1985

The configuration of needs remains more or less what it is today. The entire Occidental sector, including the USSR, has adopted the "second" consumer society model, which differs from the first by putting greater emphasis on the individual and group rather than on the family. What has transpired in the past in South America and Italy is now repeated in such zones as Africa: local culture is swept away, yielding to needs which correspond to the commodities produced by modern consumer industries.

There is resistance in China, where even after the dynastic crisis, an ascetic-collective consumption model persists. In the more developed countries, the contrast between material abundance and leisure time becomes gradually sharper, and the model of work's social decision, which keeps on the labour market primarily male adults between 30 to 45 years of age.

The young people delay their entry into the labour market by prolonging their studies, while adults are prematurely dismissed from their jobs because of technical obsolescence. Thus, those who work want more leisure time, and those who do not work demand more power, since they find it difficult to integrate into the existing productive mechanism. The reduction in socially necessary domestic work favours the women's liberation movement; nevertheless hedonism prevails.

In the decaying countries (Europe), the need for independence is expressed by rising anti-Americanism and anti-Sovietism (as today in South America), particularly on the popular level. Popular revolts, of modest proportions, assume revivalist, hedonistic characteristics. In the poor countries, the have classes become increasingly estranged from the have-not classes, but both want the same things: essentially Western consumer goods.

1985 - 1990

The contradiction between possible alternative life styles and the social division of labour explodes in the USA, where the 1960-70 generation, reaching their forties, refuse to integrate into the existing system of production. Adults no longer accept ~~max-~~ ginalisation. The demand for a different social work division is manifested in a need for mobility, a need to begin life over again, stressing quality rather than quantity (status). Anarchical ideologies spread rapidly everywhere, instantly affecting Europe where, however, they become synthesised with the need for independence and traditionally local cultures (essentially Marxism). This fusion becomes explosive because it leads to a decline in production and a rupture of Europe's alliances with the USA and USSR.

The same occurs in South America where Brazil has already achieved a considerable economic development.

The USA administration negotiates with official governments to avoid a widespread revolution, and the movement assumes aspects of independence and socialism. Equality with the American and European masters and improved domestic distribution become the demand of the times.

In India, this process strikes a telling blow at the ruling class, influenced by the West. To achieve greater abundance and permissiveness, this class has only managed to destroy various resources. The opposition proposes the Chinese egalitarian model, contrasting with the caste system, but without success. Emancipation is still the prerogative of the minority, already alienated from the rest of the country.

1990 - 2000

The new demands for a different distribution of study, work and rest over the arc of life are formulated and codified in the USA. The system remains unstable for some time, but then bureaucratic

reorganisation prevails; the new regime affirms itself ideologically, proclaiming the need to avoid waste and to establish egalitarianism. The anarchical movement organises the allocation of roles and distribution. Even the Soviet Union, following a period of exhilaration among the intellectual elite, partially adopts these models. Europe is in the full flood-tide of revolt, especially the economically weaker countries. The conflict of interests estranges the more industrialised countries of the North from the Southern countries. England, Germany and Scandinavia adopt the American model of reorganisation.

The "American cultural revolution" frees the nation's progressive forces, as well as those in South Asia and Africa. Here, the consumer society model of the emerging elites is overturned. The movement assumes elements of Marxism, with independence, essential needs and equality as the predominating issues.

Japan, much less involved with the American experiment because the organisation of its vital structure is already radically different, experiences a rebirth of the Asian mission. This provokes a reaction in Australia and South Africa, which make common cause against the other "races" seeking to plunder them of their territories.

Racial wars follow, bringing social chaos, famine and death in the poor countries, where the most urgent need is to avoid death by starvation, hence survival.

The demand for autonomy based on religion also spreads throughout the Middle East. The Koran, preaching equality, presupposes that the resources of the country belong to its inhabitants: wipe out Israel, overthrow the corrupt regimes: Islamism, nationalism, anti-Semitism and Communism. The war against Israel is lost, and the Arab world is thrown into a religious crisis, while social disorders reap countless victims throughout North Africa and the Middle East.

In South America, where revolt has broken out previously, socialist ideologies take hold, clashing with consumer ideologies. The USA continues to support the governments; thus, social-consumer reformism prevails in Brazil and constitutes South American power, All South America gradually becomes aligned with this directive,

Finding South Asia an obstacle, Japan identifies itself totally with the historical tradition of its people and^{of} China, and breaks off its alliances. Russia fears for its hegemony in Asia, and anti-yellow sentiment sweeps the country. Taking advantage of America's commitments in South America and the Middle East, these political, racial and economic tensions erupt in a war against China, where racial nationalism explodes and the idea of an anti-white Asian civilisation takes root. The Sino-Russian war ends with neither victors nor vanquished; nevertheless China suffers from scarcities of various kinds. With the coming of peace, the Sino-Japanese world devises a defensive philosophy with more marked religious components, strictly subordinating individual needs to the collective needs of its society.

2000 - 2010

The consumer society is in crisis everywhere except in the Northern (USA-USSR) and Southern (Australian-South Africa) blocs, where the administration of scarce resources for everyone is the dominating ideology.

The notion of abandoning the poorest to their fate gains ground rapidly, on the rationalisation that they are paying the price of their incapacity. Opposition, however, is put up by strong ideological components of the Christian-Marxist stripe, who consider this dominating ideology immoral.

Meanwhile, in South Asia, Africa and India, the consequences of the recent clashes continue to inflict fearful famine and

epidemics on the populations. Conditions in the Middle East and Mediterranean basin are somewhat better. China and Japan adopt a philosophy which renounces worldly goods, but rigidly restricts freedom and autonomy.

2010 - 2020

In the United States, the consumer society model is partially abandoned; thus, it persists only in the USSR and the Southern bloc (Australia and South Africa). Christian-Marxism becomes the dominant ideology in South America and the Mediterranean basin and finds points of contact with Sino-Japanese ideology. The American economy enters into a structural crisis, which results in an accentuated bureaucratic centralisation. Difficulties with America, Soviet exploitation, poor relations with the Southern bloc and its terrifying prior experience persuade India to join the Asian bloc via a religious mediation which synthesises the Buddhist and Marxist components at the expense of Hinduism. The Buddhist-Marxist synthesis tends to spread throughout South Asia.

In South America, the Christian-Marxist synthesis becomes predominant, and spreads throughout the Mediterranean basin and the Middle East, where it encounters a transformation of Islamism. Since the wars of hegemony, Islamism has evolved toward themes of individual salvation.

2020 - 2030

American power has grown, but American opulence has decreased in terms of the individual. Bureaucratic centralisation is now complete. The nation discovers that the southern bloc has become an awesome rival, while South America refuses to yield to America's programming policies. The centralised Administration's policy on world resources is carried forward, however, thanks to Soviet

support. New religious ideologies flourish within the empire.

The governing class believes that it can solve the problem of hegemony once and for all by allying with Russia in a war, after which the two powers will share the spoils -- the Mediterranean basin will go to Russia, South America to the USA; but popular opposition to this strategy is strong.

In India, where the new Buddhist-Marxist religious synthesis still advances, peace is made with the Muslim world. Meanwhile, the Buddhist-Marxist synthesis spreads to Southeast Asia, reducing here, too, the tensions which exist with the Muslim world, and creating a basis for a conciliation with the Chinese synthesis, which acquires more and more religious components. In the framework of religious movements, which threaten to erupt in religious wars, the process is continuous.

Meanwhile, the ecumenical Christian-Marxist synthesis, marked by the characteristics of a salvation religion, spreads farther afield; it takes root in the USA, and even makes inroads into the USSR.

2030 - 2040

The syncretic politico-religious process continues; Orient and Occident meet in the Mediterranean basin, which becomes a tension area where the dominating class pursues its policy of agreement with the USSR and the Southern bloc. The ecological impoverishment, however, is now extremely grave, and the rupture between the elite and popular classes, with the latter now immersed in a new religion, widens. The Soviet Union now believes the moment has come to impose its hegemony over the entire planet, hence the danger of war with the USA. This danger is averted, however, because the USSR fears it may be too weakened. This benefits the Southern bloc.

THE PROBLEM OF THE NEEDS OF MAN AND THE NEEDS
OF SOCIETY'S EXHAUSTIVE INTERACTION

By P. R. Bize
Honorary Professor at the
National Conservatory of Arts
& Trades, Paris

1- Meaning of the Needs.

From the point of view of "systematics", there is nothing in nature and in all things but systems, i.e. finalized groups of elements in interactions, which differentiate from one another by their finality, their structure, their "complexification" level, their plasticity possibility.

Man himself may be considered as a system of multiple constituting parts, highly complexified, having survival as a finality, in an "optimization" perspective, allowing good living and living "differently".

Two men confronting one another are two isomorphous but not identical systems, which are related to one another.

Every group-integrated man represents two related systems, that of the considered individual and that of the organized group to which he belongs.

These systems finally amount to systems of various needs to satisfy, all of them finalized by the general need of optimized survival.

These various needs present themselves characteristically under the form of bi-polar vectors, some of the type Yes-No, (I am hungry - I am not hungry), others of the type active-passive (to be loved - not to be loved), or of the pro-anti type (love - reject), even of the conjunctive- disjunctive type (love - hate).

In these conditions, to satisfy a need, is to make of it enough but not too much, situating oneself in an intermediate stage of satisfaction and thus of balance.

2- Definitions.

The classical error was, in fact, to consider the state of need as responding only to a state of lacking, whereas there are many needs which respond to a state of too-much, even of a state of crowding.

Thus it may be said that there is a state of need when, in a system there is a state of "lacking" or a state of "too much" in relation to a norm (biological or socio-cultural). The satisfaction of the need, by fostering a feeling of pleasure, brings back the balance, while the

non-satisfaction creates physiological and psychological perturbations.

Actually, every need is preceded by an urge generated by a state of unbalance, bound to a state of lacking or excess of fulfilment. When the urge is consciously felt, it becomes need, desire or aspiration. There is obligation-need when there is absolute necessity, desire when pleasure is anticipated, aspiration when a superior level is foreseen; it should be understood that, by their intensity, desires and aspirations may become needs.

3- Necessity of setting a limit to the term.

First of all one does not wish for anything (whatever drink, house, car, woman, etc.); we are electively attracted by our preferences. The preferences respond more to tropisms than to actual needs; they do nothing more than coloring them.

Similarly, the operational needs must equally not be taken into account: there are as many ^{of them} as active verbs and therefore too many, which takes all value away from them; such are, for instance, the needs of hammering, sawing, - the needs of analyzing, of classifying, of programming, of solutionning, etc.; certain of them, however, because of their importance deserve to be considered needs: particularly those of hunting, dancing, seducing. So it is

for the solution-needs, i.e. the different solution types which occur and impose themselves when there is non-satisfaction of the needs: sublimation, aggressivity, toxicomania, boasting, and in the interiorized mode, narcissism, toxicomania, artistic enkystment, etc.: these solutions are only brought-in responses and not starting urges.

4- The taxonomic problem.

It is a classical thing to distinguish primary needs from secondary needs; primary needs respnd to fundamental urges, indispensable to survival, biogenic, while secondary needs are accessory, of a socio-cultural and psychological order. But the criterions of distinction are quite vague. The animal which is evolved evidences needs of pleasing, of being well considered, of being petted, of being forgiven, as if this was part of its biological equipment.

As a matter of fact, every attempt at a biological reduction or a sociological reduction is equally wrong. Every need is a bio-psycho-sociological complex.

It is therefore necessary, in the matter of classifying, to try to define precisely a certain number of needs, placing them in relation to one another according to analogies and differences in order to group them, following a view of factual reduction, which can as yet be only in-

tuitive. Thus one can understand the diversity of the proposed lists and the number of accepted needs: 27 in Garnier's list (1852); 12 in that of Ribot (1917); 14 with Dumas (1937); 44 with Mac Dougall (1935); 38 with K. Dunlap (1934-1945); 44 with H.A. Murray (1938).

The latest lists are those of Aubrion (France), of I.R.A.D.E.S. (Italy), of Maslow (U.S.A.).

5- List of the needs of Man:

Proceeding from the component parts of Man, it may be considered that the latter is at the same time a corporal being, a relational being, a thinking being and a specific being:

A. As a corporal being, he is:

I. A biological being with needs of: 1) nutrition, 2) reproduction, 3) activity and rest, 4) vital space.

II. A vulnerable being with needs of: 5) thermo-regulators and clothing, 6) shelter and housing, 7) corporal maintenance, 8) attack and defense.

III. A sensory-motor being with needs of: 9) sensorial, 10) motor and expressive.

B. As a relational being, he is:

IV. A socio-affective being with needs: 11) sentimental, 12) gregarious and imitative.

V. An existential being with needs: 13) positional and of hierarchical situation, 14) of self-respect, 15) of imitation.

VI. A civic being with needs: 16) economic, 17) of a person as such, 18) professional.

C. As a thinking being, he is:

VII. A mental being with needs: 19) of consumption and struggle, of dreaming and adventure, 20) of knowledge, 21) of creativity, 22) of directive systems (opinions, beliefs, ideologies), 23) of rationalisation.

VIII. A hedonistic being with needs: 24) esthetic, 25) of personal pleasure and luxury, 26) of entertainment, 27) of novelty, 28) of happiness.

IX. A metaphysical being capable of surpassing himself, with needs: 29) of evolving, 30) of improving himself, 31) of ethics, 32) of semantics, of cosmic and sacred integration.

D. As a specific being, unified by his genetic code, his conditioned characterization, he is searching for his unity, wherefore he has personalized needs in all fields.

6- The problem of characteristics.

All that we may need, in fact, whether objects, persons or even institutions, whether a monkey wrench, a faucet for a bathroom, an apartment, a house, a city, raises system-

atically quality problems, under the form of quality which we have to look for and realize, of qualities which characterize and thus play the part of scales in our choices and decisions.

The characterizing qualities are the following:

I. Characteristics relative to the material aspect:

- Practical characteristics: such are the parameters of innocuity and security, - of solidity and capability, - of commodity and comfort, - of repairability and accessibility.

- Theoretical characteristics: these are the ones that command the degree of perfecting, i.e. of differentiation, of sensibility, of performance level.

- Economic characteristics: production cost, maintenance cost, selling and exchanging facilities.

- Esthetic characteristics: shapes, colours, decoration, etc.

II. Characteristics relative to the human aspect:

- Adaptation to Man: facility of utilization ~~xxxxx~~
(it is the very aim of ergonomics).

-, Adaptation to pursued aim: ~~the~~ the profession, to the social category, to prestige.

III. Philosophical aspect:

- Integration to the environment.

- Good or bad consequences for Man and humanity.

In this enumeration is to be found the fundamental values upon which Spranger (Germany) had insisted.

These selective qualities, when presented under the form of graduated scales and when they inspire our thought in our choices, become constitutive of our scales of values.

7- The needs of the groups.

Every group, in some ways, behaves as a person. Whether it is an enterprise, different societies, states, the correspondant groups have to satisfy their own needs in order to secure survival. Some present themselves under the form of in-put: needs that the group members must satisfy; others under the form of out-put: needs that the individuals expect the group to satisfy.

On the in-put score, every group must consider: - material needs: finances, attack-defence possibilities, settlement of space, necessary premises.

- relational needs: socio-affective (to be devotedly loved, to be helped and protected), existential needs (to be well thought of, to be considered, to be always victorious and therefore to know how to systematically save face, to dispose of authority and power), civic needs

(discipline, citizens' membership).

- super-organic needs: mental (to be informed, ^{to}conceive, programming, proposing), hedonistic (with occasional gregarious festivities and commemorative festivities), metaphysical (with a certain holiness fostering devotion).

- specific needs, in function of its established objectives, of the geo-climatic environment, of the ethical characteristics of its members.

On the out-put score, every group is bound to "give" in various forms: to inform, to help, to protect, to assist; to render justice; to regulate; to satisfy principally four fundamental needs: housing, education, health and the possibilities of work.

The list of State needs and those that it is called to satisfy necessitate as many ministries, some for its own cohesion (finance, police, national defense, central information), others aimed at satisfying the group members (their list is obvious).

8- The accomplishment of the individual.

It is possible only if the geographic surroundings and the society to which he belongs allow him to satisfy not only his material needs but also his relational and psychic needs.

The secret wish of everybody is that all should be given free of charge, just as it is for a child in his crib, without having to make the necessary effort; i.e. a society entirely permissive.

Without effort, however, the individual would degenerate and a society made up of "playboys" only, could not survive.

Without the possibility of differentiation among individuals and therefore, without a certain form of hierarchy, the risk is entropy, whereas life and survival require negentropy, the exhaustive and complex evolution of everyone.

Without constraint and without directional principles, instinctive regression and un-livable anarchy are to be expected, whereby the strong subjects and enslaves the weak.

But too many constraints stifle the individual; the effort is difficult and then seems to have been made in vain, while all urge of creativity and all taste for initiative is annihilated.

One always finds this bi-polar aspect in all things, the solution of which could hardly be expected to be found in the extremes, but rather on the shores of the in-between.

9- Interaction, need of individuals and need of groups.

One is confronted by a dialectics in which, from every side intervene needs to be satisfied, required exigencies, possibilities of satisfying them, solution to be found. This solution can only be found under the form of a com-
promise or of successive compromises unless the interlocu-
ter is to be suppressed!

The result is struggles which engender various forms of government. If one takes into consideration the two following principal parameters: collectivism-individualism on one hand, directionism-liberalism on the other, the four following types of societies are to be obtained:

- that of the dictatorship-capitalist type (fascism)
- that of the dictatorship-collectivism type (totali-
tarianism)
- that of the democracy-individualistic type (capitalism)
- that of the democracy- socialism type.

Between the savage collectivism, oppressor, and the savage capitalism, exploiter, viable intermediate forms would be in order.

History is movement, cyclic oscillation; no wonder a valid definitive model has not as yet be found for society. Perhaps it is because Man and his different needs have not been taken in consideration enough.

'HUMAN NEEDS AND THE NEW SOCIETY'

Reflections of a Non-Specialist

By Marie Renée Croose Parry
 Honorary Secretary,
 The Teilhard Centre for the
 Future of Man

HUMAN NEEDSThe Human

Evolution equals the rise of consciousness

Rise of consciousness is the effect of union

Union differentiates and is creative:
 To create is to unite

Humanization: personalization through 'creative union' and
 through participation in the creation of a common future

Human Needs

The phyletism of ethics and religion seen as a 'biological'
 necessity

Human development 'toward death': the vision of an open future
 and of an 'absolute future' as an evolutionary necessity

Economics and Man's future

Education and Man's future

THE NEW SOCIETYSociety

The nature of society: the personal and the collective - the one
 and the many - a Teilhardian insight

Western Society today

The New Society

Some values and indicators for the development of The New Society:
 the tribal societies in Africa - the new Chinese society - the
 Jesuits in Paraguay I610-I759

Constraints and exigencies in building the new society: the knowledge-, information - and population-explosions, the time factor

The New Society: the creative use of the dialectical tensions between the communal and the global - discerning eutopia - education for collective awareness - love

HUMAN NEEDS

Edgar Morin's latest book 'The Lost Paradigm: Human Nature' (1) is prefaced by a table which tells us, at a glance, what is meant when we speak of evolution as a creative process from hydrogen to Man:

Universe	7000 million years
Earth	5000 million years
Life	2500 million years
Vertebrates	600 million years
Reptiles	300 million years
Mammals	200 million years
Anthropoids	10 million years
Hominids	4 million years
Homo Sapiens	100,000 to 50,000 years
City, State	10,000 years
Philosophy	2,500 years
The Science of Man	0

This table is an apposite introduction to my theme. For I want to consider "the human", "human needs" and "the new society" against the background, and in the context, of the evolutionary totality known to us. I want to view man in terms of an implicitly unifying bio-natural, psycho-social, and convergent progression.

I recognise that such a generalised, universal approach to a global problem, in a few pages, can only highlight a few key issues. But such an overall view is necessary. The malaise, the cancerous growth from which the body of mankind suffers in Western-style societies, is rooted in a compartmentalized interpretation of reality. We 'progress', intoxicated with the power of our individual and teamed intelligences by the 'preferred pathways' of power politics. We are obsessed with security, with ease and comfort, and stimulated from without

by all the noise and trivialising amusement of our materialistic society and the free enterprise system. This whole process is constantly reinforced and accelerated by its engulfing manifestations - and on the backs of the exploited, powerless, anonymized and depersonalized majority on this planet. What can help Man to reorientate himself and to transcend this state of affairs?

The view of evolution as an ascent of consciousness, from energy to matter to life to thought, is (as I shall try to outline) an imperative option for the value-oriented interpretation of evolution and life. It differs sharply from the conclusions drawn by some present day scientific objectivists: by Jacques Monod in the last pages of his book 'Chance and Necessity' (2); by Desmond Morris in his reductionist view of man in 'The Naked Ape' and 'The Human Zoo'; by Robert Ardrey in his works; by the vast corpus of existentialist and structuralist literature; and by the behaviourist psychology of a B.F. Skinner ° in 'Beyond Freedom and Dignity' (3). I wish to place, at the outset, the greatest stress on the deep influence of these best selling or much noted works (however disparate their scientific quality), because it is their interpretations of the human condition which are still gaining ground, nurturing the majority view of scientists, technologists, sociologists, business men, bureaucrats and 'everyman' that, a priori, man's nature is selfish and aggressive and that "it is impossible to change human nature". If a global opinion poll were taken today this would be the average view taken.

It is this erroneous, insidious, hopeless view (as well as the absence of any view) which leads us on to the road of laissez faire (5), of half-measures, of pseudo-remedies and pseudo-reforms, in one crisis after another, by then the war in Indochina, the accelerating arms race (6), the monetary and ecological crises, etc. We continue to make "lie our refuge and illusion our shelter" as Isaiah remarked of his own time. This lack of real understanding, of imagination, of social courage and effective effort, in turn reinforces Man's feeling of personal impotence vis-à-vis the growing military-industrial colossi with their scientific and technological trade-offs and bureaucratic spin-offs. The longer we wait to act wisely,

° (Notwithstanding, the arguments of John Platt, pointing beyond the purely reductionist, behaviourist interpretations of the premises of Skinner's methodology (4) which merit close study).

courageously and incisively, the greater will be the chance of the colossi becoming run-away systems. The stronger too will be the reinforcements to view ourselves as too feeble to bridle and subjugate the monsters of our making - let alone to transform them into servants of our authentic needs.

To reverse this deadly trend we must look anew and with other eyes at evolutionary history and our interpretation of it, individually and collectively. For all we are, and our potential, we owe to the process which made us and to what we have learnt from the past. It is only through a coherent view of the past that we can understand our present and use it to build an ontologically coherent, and human future. The "eyes" (and all lies anchored in the verb "to see", to see correctly) which have been able to discern purpose, meaning and an ethic in evolution are not only those of Teilhard de Chardin, of Marx and Engels, which Jacques Monod decries. They are those of Einstein, Heisenberg and other physicists; of Waddington (7) and Dobzhansky (8 and 9); of such illuminated, though very different 'universal men' as Joseph Needham (10) and J. Bronowski - to name but a few thinkers who proffer a world-view which meets the human need and the insatiable hunger for a logical and coherent understanding of our present existence, and for the answer to why and how we might move on from here. Without this understanding, which must grow into a collective awareness, into a new sense of the solidarity of the human species we shall sooner or later give up the very struggle of evolution to which we owe our existence. Increasing mental illness, apathy and violence, escape - and drug - addiction will lead to individual and collective suicide, indeed to a 'lemming syndrome' on a human scale. Statistics show that these symptoms are on the increase as Western influences spread. Now that these symptoms are gathering momentum for all to see, we must try to achieve rapidly the attainment of each Man to an education which will (i) allow his transformation as a cell of the body of humanity to a new liberating and energizing understanding of the value of his person as a unique creation on the basis of the facts of evolutionary history and science and (ii) provide, in new societal arrangements, an opportunity for each Man to develop and déploy his unique creativity for the benefit of all. This is a Herculean, a truly eutopian task. But as John McHale pointed out in his excellent paper on the relevance of the man-machine symbiosis (11): "As evolutionary process, it is interesting to observe that at the point where man's affairs reach global complexity, he develops precisely those conceptual and physical tools which enable him

to deal with these larger magnitudes". If the odd 400,000 human beings and 20,000 institutions, which were interlinked in their efforts to put man on the moon, could now collaborate to help man understand his true history and worth; if some of our defense and intelligence budgets could be used to finance UNESCO, to assist the improvement and availability of TV and radio facilities, and programmes for Tel-Star; then the problem of universal education for survival might no longer seem unsurmountable.

If Man, a rational being and the first creature to live its life in the full apprehension of living toward the certain death of its individual body, can see no lasting reasons to believe in the value of his life and work, he cannot believe in any future. If he cannot believe in the future he will abort his evolution. It is in this sense that Teilhard spoke of the need for "rational invitations to an act of faith" in the future. He lamented that "science has not yet found a place for (man) in its representations of the universe". He sought to re-evaluate the role of "great numbers", the synthesis of freedom and lawfulness, of spirit and matter, of religion and science. He saw religion and science as being "the two conjugated faces or phases of one and the same complete act of knowledge - the only one which can embrace the past and future of evolution so as to contemplate, measure and fulfill them". (12) Teilhard would have deeply appreciated Einstein's statement that, "Science without religion is lame but religion without science is blind". The future of Mankind is being determined now by the great option for or against the purposive and meaningful view of man's place in nature and the universe, as the very catalyst for his goût de vivre and as a spring-board for the activation of his energies (13).

The recent showing in England of Bronowski's penetrating TV programmes on "The Ascent of Man" (14) illustrated inspiringly the improbable success story of the developments which proceeded from 'hydrogen to the human brain', and the creative force and beauty of Man's mind and heart in his inventions, his art and his heroism. It highlighted the continuity, the tenacious and laborious force of evolutionary creativity and proliferation which bridged the gaps and discontinuities in the process. It showed how this creativity led beyond the faulty gropings and the dead-ends in, for example, the dinosaurs which, by a quirk of natural selection, acquired more and more body mass rather than brain and were not rescued when too little and too late,

in their rear, a small pseudobrain appeared.

The programmes highlighted the resilience of cultural evolution beyond the decay and collapse of great civilizations whose mental and moral fibre weakened through other kinds of overspecialisation. It is the study and understanding of the slow and toilful mechanisms which, in thousands of millions of years and in a process of rising differentiation, organized and united energy-patterns, subparticles, atoms, molecules and calls into ever more complex systems, differentiated living organisms, conscious creatures, leading up to the self-conscious, self-organizing society of a species which took over the planet earth and now sets out to conquer space. It is the integral understanding of this process which, permeating our being and knowing, will serve as the psychic trajectory into the future.

The study of the evolution of life, seen not as a mere epi-phenomenon or accident in a corner of the universe, shows it to be a consistently creative, because unitive, process. A physical change of state accompanied each qualitative leap throughout the history of evolution. An increase in complexity and consciousness led to a change of state, a fundamental mutation. There occurred no unlimited growth leading to success. Undifferentiating, "unlimited" growth and overspecialisation led to extinction, as with the dinosaurs. The growthpoint at the human level, from which alone can issue new differentiating qualities, must be found at the tip of the arrow which led through the process of cephalisation to the human brain and its reflexive, reflecting consciousness. But, human consciousnesses, having reached a point of centeredness, of self-reliance and independence are increasingly tempted, in a materialist society, to cultivate their own 'perfection' and its enjoyment, to revel in self-centeredness, in the prolongation of the instincts of self-preservation of our animal ancestry which were needed in the pre-reflective, slowly ascending stages of the pre-hominid world. The mere prolongation of these instincts in Man marks a new kind of overspecialisation issuing in greed, pride, hybris and narcissism.

In Man-in-Society, crowding the planet, a change of state must now occur. What was necessary for the survival of the species to make the arrival of man possible, namely the territorial imperative, the survival of the

strongest and fittest where the 'blind' means justified the supreme 'goal' of survival, now leads the species homo sapiens into a dead end. For reflecting consciousnesses, developing in unlimited prolongation of the animal instincts and drives, will use the discovery of atomic fission, of laser beams and electronic devices to maim and kill. The competitive urge to take privilege and profit at the expense of others, will cause the whole species psychically to regress and suffocate through rule by the 'strongest and fittest', and promote the most refined diabolical cunning and tortures, mental and physical, of which reflecting consciousness alone is capable. With the murders of Salvador Allende, of his friends, and of the South African gold miners still fresh in mind, this appears to be the way we are going at present. I am reminded of Robert Jungk's sober analysis of the growing dictatorship of the multi-national corporations (15), in contrast to the views of their 'prophet', Hermann Kahn, set out for the first General Assembly of the World Future Society in Washington, May 1971, on the great human development the multi-national corporations are preparing for the world.

But, it is I believe, not too late for the great *m e t a n o i a*. There can be felt a stirring 'at the heart of humanity', among people who see holistically and are eager to work selflessly to give of the best of their knowledge and their love, among those whose psychical antennae are still attuned enough to hear, to listen and to opt in relation with the law of evolution, among those ready to unite their awareness to the awarenesses of others in the pursuit of one common ethic. This ethic involves "TO BE MORE", to be more individually through the achievement of ever greater awareness and relatedness for the purpose of giving more for the advance and the fulfilment of the Community of Man. Being-more creates a new 'psychic field' whose attraction will increase with the numbers of high-quality units entering into and uniting with it. It is only in this dialectical tension between "the one and the many" - a tension consciously and faithfully lived - that there lies the full realization of each person and the authentic advance of humanity. This dialectic has been cogently analysed by Madeleine Barthélemy Madaule as "the dialectic of being and knowing" (16) (17). Also the fifth and sixth chapters 'La Troisième Naissance de l'Homme: La Société Historique' and 'L'Homme peninsulaire', of Edgar Morin's book (1) break new ground in trying to grasp this dialectic by a holistic evolutionary explanation of "the unity of diversity".

Here the genetic code, the same genetic constitution (DNA) and the same basic organisation of the cell structure of Man, is seen as the invariant which perpetuates without discontinuity the same "genotype". On this common basis an astonishing diversification of personalities and creativities are engendered which, in turn, infra-complexify and infra-differentiate the societal context. The process of an authentic, creative unification of the human family will be the result of a coeur à coeur, a coming together of hearts that are informed by knowledge. This is the very opposite of Hitler's pseudo-unification of Germany on the basis of "Blut und Boden" which was a corps à corps for war and conquest and the demonic annihilation of a sizable complex of 'cells' of the body of humanity. It is the very contrary of the American alibi to unite in the "defence of civilisation" in Indochina (as Cardinal Spellman exhorted the troops on his visit to Vietnam). This kind of union produces physical chaos and psychic regression in the lives of all affected, and particularly in those of the workers, engineers, scientists and bureaucrats who are instrumental in fabricating, day after day, the tools for the perverted uses of human energy. These cancerous organs must be exposed to the radiation of empathy, understanding and reasoned debate. If they prove to be too large and malignant they must be neutralized and, if need be, cut out before the global body is led to ruin and decay.

Many people are still asking and many more, who are ashamed to ask, are thinking "do the masses really matter? Is war not nature's way to cope with too large numbers?" In the beginning of 'The Phenomenon of Man' (11) Teilhard points out that the Universe, the vast mass of 'cosmic stuff', was necessary to evolve that great 'improbable', the human personality. The interplay of great numbers was a key factor from the start, pointing toward the crucial relationship between the existence of quantity and the emergence of quality. The history of evolution is one great operation of nature's innumerable trials and errors, of false (abortive) and of real processes of unification. These processes in each evolutionary phase move in a threefold 'rhythm' of (i) proliferation (explosion of potentials), (ii) realization and compression (differentiation) and (iii) emergence of a new complexity of organisation accompanied by a rise of consciousness. Again, recorded human history shows a large series of trials and errors, from individuals to civilizations. The largest and most complex of these, namely the global society of our time, operate more and more in large teams

and organizational bodies to progress in knowledge and power - orbiting the earth and landing on the moon. It is through the very pressures of an exploding population, through the rubbing of more and more shoulders in the lives of everyman, and in the coreflection thereon generated in the thought of the world's laboratories, universities and communication media, that the psychic temperature on our planet rises to boiling-point and makes its 'evolutionary demand'. See, change, cross the new threshold to a new societal arrangement and to a higher consciousness, or perish! Again, a 'critical mass' is needed to create the pressure, the state of maximum compression by which a mutation becomes unavoidable. At the human level this mutation will have to be willed by each and all, and in good time, for the whole will be only as good as its parts. One cancerous cell is able, eventually, to kill a body. One cancerous spirit can destroy the unity of a community. One cancerous nation can lead the global body into a dead-end.

If Man everywhere were helped to capture and develop further the sense and attitude of wonder, curiosity and reverence for human and natural life -- he would be able to learn to transform his vital animal heritage from the present individualistic, exploitative usage to a pro-existing energy for the common good. Anything Man can fathom in unison, he can ultimately bring about. In the dialectic between the thinking brain and the feeling heart of each member of the human family, Mankind is an open system. For one human mind can both englobe the galaxies and white dwarfs (the without of the withouts) and experience 'the night of unknowing' (the within of withins).

Thus the nearly four billion minds, on the stabilizing base of a common ethic, could discern a eutopia (a good place), to which they would increasingly be drawn as the new psychic field gains in strength and attraction and becomes, eventually, a unified field. On the basis of this common ethic of union and of personalization no 'anthill' society can ensue. The growth in population will become self-regulating to the degree in which each Man is enabled to develop and use his uniquely knowing and loving consciousness. Thus unity could be achieved by a common code of the ethic of evolution -- namely the ethic of union, in analogy to the common base of our species in the genetic code and cellular structure. And diversity would be born from the uniqueness of each Man through the syntheses he

offers on the basis of his individual unique properties. These are: (i) the bio-chemical composition of his brain; (ii) his genetic heritage and (iii) the memory storage of his growing experience and knowledge, against the background of which all new information is uniquely assimilated and can be fed back creatively for ever higher syntheses within his own emotions and thought processes, and in the dialectical, creative interchange with others.

For this to grow into a worldwide development for the survival of the human race, there must be devised now a new global approach to economics, human health and education. I mention economics first, because it is the strongest stumbling block to the achievement of what is suggested above. Without the right amount of calories, of proteins and vitamins which the majority is lacking, there can exist no health of body or of mind. But, simultaneously, without the rapid re-education of those at the key levers of global power, who dictate the economic approaches and their consequences and nearly everything else, there will be brought about no change incisive enough to alter the course of events in good time. For as the table on page one also shows, the higher the degree of consciousness and the greater the number of representatives of such consciousness, the faster is the acceleration of developmental processes. This is now happening in Man's efforts in these fields of endeavour which allow a minority to have more and more. Thus humanity is divided into 'haves' and 'have nots' and into divergent hostile classes, by constant reinforcements of the old historic ills, and with fiercer reinforcements through the steadily improving skills and methods used. What other parameter can be of use in the attempt to get us onto the convergent, creative path but the simple dictum that each man must have enough to be enabled to be more. This includes not only justice being done, but justice being seen and experienced to be done everywhere. Is it really simplistic to say that economics must be seen, in the last analysis, as nothing more and nothing less than the means by which men's needs to grow physically strong and healthy in an ordered and salutary environment is made possible, so that he might actualize and realize his talents, become a person and participate in building the future? True, the present world economic system has a fierce grip and is deeply entrenched, whether through free enterprise or state capitalism. The powers that be are too selfish and blind to put their extraordinary capacity of invention and manipulation to the use of 'everyman', rather than

of their national or group interests. But even a journey of a thousand miles starts with a first step. Could the growing body of futures research not try to "come clean", and bring about its own *metanoia* before issuing new reports? I feel this need strongly when I read some of the many documents under the general heading of Futures Research.

First, the February 1973 Club of Rome account (18) contains some painfully paliative and relativating language of compromise, as if afraid to shock further and to lose the ear of the powers who still have scope for action. This is fallacious diplomacy. The 'predicament of mankind' is clearly restated, but is it really possible to say, as on page 2 (and from another standpoint on page 14, point 8): "What we term the Predicament of Mankind is our own limited perception of many individual symptoms of a profound illness of society for which we are unable to prescribe an effective remedy in the absence of a reliable diagnosis"? I can only exclaim with Margaret Mead (19): "We have all the knowledge we need to act now!" I am unhappy with formulations stressing the enquiry into man's capability to adapt to change (pp. 3, 7, 8 and 17). The issue is really for Man to become the maker of history and to make the values we know to be absolute - trans-nationally and transreligiously - break through in a new societal framework; where homo cyberneticus is at the helm of his destiny, deploying his creative energy and ethos in helping to shape the destiny of all. And again, should we be so emphatic regarding "the workings of the world as a finite system" (pp. 2 and 9) just when we are coming to see life, Man and human invention as neg-entropic (20)? Successive generations and civilizations, despite billions of individual deaths, have made up a growing chain of dynamic equilibria, which provide the interim stabilities for the continued growth of consciousness. We must conceive of a socio-political framework in which it is possible to achieve the first plateau of a dynamic societal equilibrium on the global scale, based on the ethic of union - and from there to progress to the next and the next. This requires thinkers who are not only unshackled and uninfluenced by the inhuman restrictions and manipulations of most present institutions and bureaucracies, but who are also willing to incur the risks of lowering their academic reputations and their existential security by breaking with the methodologies and models which take the elements of the present predicament as their points of departure. These are the true re-revolutionaries.

Second, a paper by André van Dam 'Can corporate planning invent the future of the Third World?' (21) which is borne by much good will and factual knowledge, is a further illustration of the temptation to believe that new wine can be poured into old vessels. Without a change in man, a change in his socio-political views and convictions and especially in man at the lever of decision-making, there can be no transformation.

Third, I have read with interest Yehezkel Dror's timely and pertinent analysis 'A Third Look on Futures Studies', but could not help but hear the echos of some of the same intellectual "hard-ego" judgements, tempting to characterize catharsis and utopia as "hallucinating" and "wild dreaming", and the call for personal catharsis as 'too tender' and 'soft ego' (to use the helpful terminology of Gordon Rattray Taylor in his book 'Rethink') (22). This book is an erudite and immensely useful diagnosis of the innumerable facets that make up the planetary predicament, though I found it lacking and weak in its reasoning for the proposal of a paraprimitive solution and for the education of the citizen of utopia. However I should like to see all Men who sense they are, and might admit to being, 'tough, hard-ego patrists', read this valuable book before they continue their work on research for the future.

THE NEW SOCIETY

In the light of these reflections it would appear imperative that we face up to the inevitability of the major discontinuity before us. Kenneth Boulding calls this the system break (23) without which the evolution of a new economical and educational praxis cannot become the midwife to "The New Society". If we go on refusing to acknowledge this evolutionary necessity, we shall abort as a species. Yet we continue to allow the cancerous systems to grow, soon to reach the point of metastasis, when environmental and psychic pollution will have engulfed us. This should be obvious to anyone reading the daily papers. It is, despite the minor and major correctives, as if the many alarms had not been sounded. It is 'business as usual' in the West. A recent corrective to counter unemploy-

ment in the USA was the \$ 200 cut in the prices of automobiles to encourage their production and sale. While the fourth annual report of the US Council for the Quality of the Environment (September 1973) estimates the need of \$ 274 billion to fight pollution between 1972 and 1981, \$ 105,6 billion to diminish atmospheric pollution, \$ 121,3 billion to fight water pollution, and \$ 41,8 billion to destroy non-biodegradable waste (24). All these mounting problems are well documented in René Dumont's latest book 'Utopia or Death' (25).

But the lesson is learnt, and the challenge for socio-political action is placed before us, unequivocally, by Roger Garaudy in his book 'L'Alternative' (26). His views are inspired by a synthesis between what is enduringly and authentically marxist and socialist, and by the new ethos arising from political and process theology, from the theology of hope (27) and from the Teilhardian faith in Man. Garaudy describes the dehumanising trap in which we have landed and are caught, as due to our having made, first of money, then of land and finally of human work "impersonal commercial units", subjecting them to the (manipulated) laws of supply and demand and the blind forces of the market.

"A society ruled by blind laws, the competition of all for the profit of some, where the function of investment is not a social function . . . such a society loses any conscious control as to its ends In such societies there subsists one absolute finality: growth for growth's sake; but this is a finality without end, or more precisely: without a specifically human end. The interplay of competition, between individuals, between enterprises, between nations, is such that no one makes decisions upon the ends, but only upon means, the means to maximise profit or growth masked as the immanence of a natural law How could we have come to such a desintegration of human society? By the sovereignty of the market, devouring in its mechanisms work, land and money".

Can we really continue to entertain, with the most rational of our thoughts, further doubts regarding the true diagnosis and the need for a system break? Certainly a system break hurts. But then all error has its price and the price will be ever greater as the errors increase with every passing day. Roger Garaudy devotes most of his book to proposals for the changes of our present structures, of our consciousness, and thereby of the very goals of our civilisation; which would amount to nothing less than a

cultural revolution because

"the exigencies of growth have imposed themselves as a model for civilisation; the present crisis being no longer an economic crisis alone, but also the crisis of the whole pattern of civilisation, implicating all aspects of life. This crisis is not emerging from the blockage of the mechanisms of capitalist economy, as former ones, but from its very functioning (de son fonctionnement même....) Thus socialism cannot be viewed either as merely an economic system, lest it be perverted."

If the key to the creation of a new Society is Man everywhere, then education for being, and education for wanting "to be more human" becomes the key issue. If the results of advertising (28) and UNESCO's research (26) are any indication, then the potency of television as a medium for education is tremendous. In the developed countries children are said to spend between 500 and 1000 hours before the TV screen per year, which almost equals the time spent in school. By the age of sixteen however the young TV viewer will have seen anything from six thousand to seven thousand murders alone. Our radio broadcasts and films, exporting the Western 'life-style', are heard and seen in many parts of the Third World. Combined with the push of urbanization and the tourist trade, they are adding further to the deep process of alienation wrought by the colonial past. Here, and it is the greater part of the world, "the future is being colonized" most viciously and hurtfully - to borrow the sharp description by Robert Jungk of certain kinds of futures research.

The essence of education for the future is to help all Men on this planet to be fully Man, that is to aid them to the utmost in the discovery of and belief in their talents and in the possibility of realizing them, and of choosing their ends, cost what it may. Paolo Freire's book 'Pedagogy of the Oppressed' (29), conveys a spirit of empathy and socio-political conscience which should be the qualities of every educator in the four corners of the world.

It is time for the systems-researcher, the model-and scenario-builder and all the specialists who try to open windows onto the future, to take time out and gather shells on the warm shores of the Mediterranean Sea or Africa! Despite latter day distractions such as the many-shaped plastic

sheets and bottles in the seaweeds, and avoiding the black sticky tar patches spotting the golden sand and his feet, he will not be able to resist the gathering of shells, admiring their incredible diversity, their unique, many-coloured beauty and their perfection. Instinctively, he will seek out and keep the perfect ones and throw back into the sea those with chipped or broken edges. He will regain a sense of human proportion watching the fisherman cast his net over the crest of a swelling, translucent wave in which a shoal of silvery fish are riding in with the tide. He will regain that sense of wonder without which his work will be still-born. He will think about the values and the life-rhythm of the people surrounding him and consider what he might learn from turning his attention to other cultures, for instance to Africa and China. He might discover the relevance of Kenneth Kaunda's view that Africa "may be the last place where Man can still be Man". He might see that it is meaningful for our study of values for the future to examine the supportive attributes of the tribal community, which Kenneth Kaunda defines as having been "a mutual society, an accepting community, and an inclusive society" (whereas the industrial society is ex-clusive).

It was a 'mutual society' in that "it was organized to satisfy the basic human needs of all its members and, therefore, individualism was discouraged". Most resources were communally owned and administered for the benefit of everyone. "Human need was the supreme criterion of behaviour... This means that there must be fundamental agreement upon goals and all must act together".

It was an 'accepting community' in that "social qualities weighed much heavier in the balance than individual achievement. The success-failure complex seems ... to be a disease of the age of individualism - the result of a society conditioned by the diploma, the examination and the selection procedure". ° Kenneth Kaunda also remembers his horror when he first became aware of "that Western phenomenon, the Old People's Home. He writes that "the idea that the State or some voluntary agency should care for the aged was anathema to me". He explains that "in a society which

° (Compare the stringent analyses in this respect by Ivan Illich in 'Celebration of Awareness', 'Deschooling Society' and also in 'Tools for Conviviality' (30).

regards person to person relationships as supremely important, no one can be so isolated that responsibility for his welfare cannot be determined and assigned". He goes on to explain that in African eyes

"forgiveness is a social virtue. Because the only life we have known is life-in-community, to be unforgiven is to remain outside the circle of relationship and this ... is socially undesirable, quite apart from the cruelty of the punishment.... We cannot allow overweening pride and the desire for revenge to rule our hearts because these vices are destructive of community. Our whole life is togetherness and to be cut off from our fellow human beings is to die in the soul".

It was an 'inclusive society' or an extended family system, constituting

"a social security system which has the advantage of following the pattern of personal relationships rather than being the responsibility of an institution. It provides for richness in knowledge and experience for those fortunate enough to be part of it".

Kenneth Kaunda is aware that he is describing the characteristics of small-scale societies. But does not the new Chinese society illustrate that life on over 70,000 communes incorporated much of these qualities? Kenneth Kaunda is deeply concerned lest this high valuation of Man and respect for human dignity, which still is part of the African psychology and is the legacy of African tradition, should be lost through Western influence. "However 'modern' and 'advanced' in a Western sense the new nations of Africa may become, we are fiercely determined that this humanism will not be obscured. African Society has always been Man-centred. We intend that it will remain so." (31) This resolve is deeply shared by another of Africa's outstanding leaders, Julius Nyerere of Tanzania. Both would agree that while Western Man has a "problem-solving mind", the African has a "situation-experiencing mind". The African mind does not easily think in terms of "Either-Or" and is open to influences which make "Both-And" appear desirable. In the prime sector of human relationships, they believe that the African approach avoids the danger of treating people as things.

But does China exemplify this same approach on a large scale? The average Western view supposes that the Chinese people are treated as "things" by

and for the State.

The new Chinese morality and ethos, which evolved during the twenty-four years of China's rebirth as a literate and self-reliant nation of 800 million citizens, is based on the thought of Mao Tse-tung and the personal effort of every Chinese to put this thought to use for a better praxis in all sphere of life, personal and collective. Without the study of this thought, therefore, there can be no understanding and no reasoned judgement of the revolution wrought in the minds, the hearts and lives of the Chinese people, nor of the admiration and esteem they feel for him. This is doubly necessary as Soviet and some other Eastern European forms of marxist praxis are better known to the majority of people but differ from the marxism which was adopted by Mao Tse-tung to the Chinese realities. Reading in the 'Selected Works' will open our eyes to the synthesis of philosophic thought they represent, including implicitly Confucian, Christian and other elements that make up a human ontology of values.

"The thought teaches us that we must serve the people whole-heartedly, without calculation of loss or gain; that we must be on our guard against the sophistries of disguised self-interest. It teaches that problems can be solved; to solve a problem, it is necessary to analyse it correctly; mistakes must be examined so as to draw lessons from them; failure must be met with fresh determination.

Problems must be discussed with others and mutual criticism frankly accepted, whether the problem is terracing an eroded gully, setting up a political organization or rooting out false conceptions from one's own mind. The power that moves mountains does not lie in these unexceptionable precepts, but in the resolution simply and sincerely to carry them out". (32)

This interpretation from the pen of Joan Robinson highlights one of Mao Tse-tung's key convictions (shared by Teilhard) that thought and action cannot be disassociated.

When Teilhard speaks of the supremacy of love (the energy which makes of evolution a convergent process) over all other motivations for human action, Mao Tse-tung might retort that this will only be possible when class divisions in society have been overcome. Class is not defined by birth or heredity, but by a state of mind, and the state of mind is revealed in conduct. Teilhard would reply that a truly loving mind could not submit to such divisions, and the worker priests are a case in point.

In order to hasten the two main processes of (i) overcoming class divisions in favour of one common human denominator for the nation and (ii) relating thought and knowledge to action in a dialectic for the common good, educational concerns were the focal issue in the Cultural Revolution and permeate the Sixteen Points (32) laid down as the main lines to follow. Point one opens with the words that the "Cultural Revolution now unfolding is a great revolution that touches people to their very souls... to change the mental outlook of the whole of society... to transform education, literature and art". Other key sentences, some of which may astonish Western minds are:

"Encourage those... who have made mistakes but are willing to correct them to cast off their mental burdens... The only method is for the masses to liberate themselves, and any method of doing things in their stead (my italics) must not be used. Trust the masses, rely on them and respect their initiative... Make the fullest use of... great debates to raise their political consciousness ... enhance their abilities and talents, distinguish right from wrong... Contention between different views is unavoidable, necessary and beneficial. In the course of normal and full debate, the masses will affirm what is right, correct what is wrong, and gradually reach unanimity... Persuade through reasoning. Any method of forcing a minority holding different views is impermissible. The minority should be protected because sometimes the truth is with the minority... We should in the present movement continue to apply a policy of 'unity, criticism, unity'."

Since the Cultural Revolution, education has been increasingly combined with productive labour to promote moral, intellectual and physical development; schooling is being shortened; courses made fewer and better in aid of a long-term policy of

"breaking down the 'three great differences' between town and country, between intellectual and manual work, and between agriculture and industry" (32).

Much more could be told on the basis, for instance, of reports from hundreds of people who have visited China during the last three years. It is however already clear that if the predominantly intellectual, 'vertical' personality of Western man could integrate the much more 'horizontally societal'

characteristics of the African and Chinese, we would be on the way to a more balanced humanity and to a planetary civilization. We would witness, as President Leopold Sédar Senghor writes in his essay on Teilhard and African politics (33), a process of "socialization, i.e. the technical and spiritual organization of human Society - by our intelligence and our heart". Senghor goes on to quote Teilhard that this would "not in any way signify the end, but much rather the beginning of the era of the Person for this earth." We would find freedom in the "chance offered to each man (by the elimination of the obstacles and the realization of the appropriate means) to 'transhumanize' himself by going to the innermost, to the very depths of his being." But man can refuse to invent and to unite; and this is part of his freedom. Sédar Senghor believes with Teilhard that the grave international tensions and problems which we are experiencing at present are but "the birth-pangs of a planetary Civilization, a Civilization which," he says

will be completed (s'achèvera) ... only at the last stage of panhuman convergence in and through Love of the Super-Person (la Super-Personne). Only the Person himself, through the reciprocal Love he shares with others, will attract them to his heart in order to personalize them. Only the Centre of centres (Omega) achieves their accomplishment 'en opérant la synthèse des innombrables centres particuliers qui aboutissent à lui'. Thus, at this last critical point, Humanity by a final bound (saccade), leaps outside Space-Time, which has always been Man's dream".

This eschatological vision of socialization Sédar Senghor shares with Teilhard de Chardin. It is the vision of an "absolute future" without which both writers feel that the rising and converging collective consciousness of Man would, ultimately, give up the struggle.

A moment when the first such steps were taken in an authentically christian understanding of the meaning of society, lies some 350 years back in history. I am referring to the Reductions in Paraguay established by the Jesuits according to the Spanish mission system among the Guarani Indians. This was an extensive linguistic group which had developed a culture that included some agriculture, raising of domesticated animals, pottery, weaving and the use of efficient tools and weapons. More than 50 Reductions were founded in the modern areas of southern Brazil, Paraguay, Uruguay and North Eastern Argentina and the average population of each

unit ranged from between 3000 to 4000. From 1730 to 1740, the peak period of the Reductions, more than 150,000 Indians lived in about 30 missions and "they owned all things in common". The Jesuits imparted to the Indians the knowledge of their personal and collective freedom as human beings under God; that the land, herds and flocks and all the rest was their own property and that slavery and serfdom was the negation of this god-willed liberty. It was a courageous and noble attempt in the face of the fiercest slave raids and under the angry eyes of Spanish and Portuguese feudalists. Yet they persisted for almost 150 years. Literature on this Jesuit undertaking is sparse considering the large and enduring scale on which it operated and, especially, in view of its relevance today. But a major work is being prepared by a British Jesuit and may soon be available. The one great and moving dramatization of this historic event was written by a friend of Robert Jungk's, Professor Fritz Hochwaelder under the original German title 'Das Heilige Experiment' (34). He does not spare the Catholic Church for the treacherous and tragic role it played upon the expulsion of the Jesuits who, a papal emissary announced, were guilty of heresy for having tried to establish "heaven on earth". Reading 'Pacem in Terris', the enlightened social encyclical of John XXIII, had made one hope that the Catholic Church had had its metanoia. But lesser encyclicals have made their appearance since then, the most deplorable one being 'Humanae Vitae' which, in my view, is the more disturbing as it touches upon the heart of the question of 'personalization', which is the main concern of these reflections.

The implicit understanding of natural law as an immutable, basic 'given' which, somewhat ambivalently, underlies the main argument of 'Humanae Vitae', is as pre-Darwinian as some of the statements in Pius XII's encyclical 'Humanae Generis', about which Teilhard corresponded with the Pope. To discuss human procreation and love outside the purposive interpretation of evolution and the ethic of union (as discussed in the present paper) is in no way preferable to the objectivism, positivism and reductionism referred to in the first pages. If the reflective consciousness of Man signifies a mutation from the instinctual drives of the animal, the role of sexuality and human love can certainly not remain unaffected by it. In the union of human beings a totally new dimension is opened to the evolution of the psyche; it reaches far beyond the process of pro-creation. Human sexuality creates the possi-

bility for a totally new experience of self - of personalization - and of a paroxysm pointing beyond our confinement in biological Time-Space. The conception and birth of unwilled children jeopardize the possibilities for the growth of this new dimension in human love and therefore constitute a hindrance rather than furtherance of the realization of what is the specifically human potential - not to mention the crisis of human ecology. This all too brief reference to the new dignity, opportunity and challenge in human sexuality, lest I be misunderstood, is far removed from what is commonly called "modern permissiveness" or "l'égoïsme à deux", a term I believe coined by Teilhard de Chardin. Without a new vision of the evolutionary transcending function of sexuality and of eros for the future development of human consciousness we shall fail completely in discerning eutopia and educating the citizen of eutopia. The writings of Rollo May, and particularly his work 'Love and Will' (35) are, in my view, amongst the most important contemporary contributions to this subject, and a preamble to the Teilhardian concept of love and of the progress of socialization through what Teilhard called the amorization of humanity.

Here then is the place to speak of his interpretation of the role of Jesus of Nazareth in this most human of all human ventures. "Penser toujours plus loin, toujours plus vite, toujours plus un" (36). The 'trinitarian' concept underlying Teilhard's view of the future of our human evolution includes Space, Time and Love. Teilhard saw Jesus as The New Prototype of the mutation which must be wrought in the psyches of each one of us if we are to carry our personal and collective evolution to its logical fulfilment in a life with and for one-another. "Love your neighbour as yourself and love your enemy" is the call to a new dialectic of the ethic of evolution which alone can overcome that which, at present, is pulling us apart, threatens to atomize us and to throw us back into the chaos of the first oblivion, with all of our best creations. It is for this reason that Teilhard called Jesus "le Christ évoluteur". By his living, dying and reliving example, Christ 'evolves us' and draws us beyond our frailties and inabilities, so long as we preserve in our heart the passion for growth. Thus Teilhard describes the saint as one who "christianizes in himself all that is human in his epoch". This need to see the 'Jesus mutation' as a call to all men in terms of an evolutionary necessity, makes one suffer the more, and deplore the more deeply, the many frightful barriers erected by the churches bearing his name to impede the vision of him whom they have imprisoned and buried in dogmas.

A Marxist, whose vision has not been impeded by these distortions, was able to write these sensitive lines concerning the 'risen Christ':

"The resurrection is not a 'fact' in the positivist sense of the word; it is a creative act, the affirmation of the impossible by which history opens the future to all possibilities. It signifies that our future cannot be lined up in a series of facts, in prolongation of the 'givens' of the past. This sudden presence of the unexpected, in prolongation of nothing, is the birth of the awareness that Man is not born to die, but to start anew... To believe in the resurrection is not to adhere to a dogma; it is an act: the act of participating in unlimited creation, because the resurrection is the revelation of this new and radical freedom which the Greek and Roman worlds ignored. It is this faith which is the beginning of freedom. It is the certainty that it is possible to create the qualitatively new only if one identifies with those in the world who are the poorest and most oppressed; if one links one's fate to theirs to the extent of conceiving no other real victory than theirs.

This love and the hope of resurrection are but one, because we can speak of love only when a human being is irreplaceable for us and we are ready to give our own life for him. When we are truly ready for this gift of ourselves for the very last of men, then God is in us: he is the power to transform the world." (26)

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ECONOMIC DEVELOPMENT AND SOCIAL GOALS

By Jan Danecki
Committee of Investigations
and Forecasting
"Poland 2000"
Polish Academy of Sciences

In this report I should like to present my opinion on some selected problems which seem to be essential for the considerations upon alternative conceptions of the development.

In the first part I am trying to give a preliminary valuation of such type of development of the civilisation in which the quality of life becomes a resultant of the socially uncontrolled, technical and economic changes.

The second part of the report deals with criteria of the social progress.

In the third part I am presenting assumptions of the social programming in Poland, as well as the part that may be played in this programming by the social sciences.

I. Criticism of the ideology of the growth

We are living now in a period in which the myth about an automatism of the favourable effects of the progress in science, technique, and industry has definitely collapsed. Looking ahead from the perspective of present day, we may state that the postulate formulated by the pioneers of the modern socialistic thought concerning the social control over the business activity acquires a new content, viz. in two meanings: a) as a control from the point of view of consequences that the technical and economic progress may bring in the life of broad social circles, and 2) as a control carried out by these social

circles. Nowadays new arguments of a paramount importance are gathered in favour of the thesis that the social progress should dominate over the economic one. At stake is the very maintenance of the human species, its protection from dangers of ecological, political, social and bio-psychological nature which are accumulated in the spontaneous type of technical and economic development, as it is subordinated to the economy of profit, or at least aims at a maximalisation of the potential of each particular country.

The criticism of this type of development is already so far developed that it may be worth while to formulate some conclusions:

1. The economic effectiveness is not equivalent to the social effectiveness. The amount of national income represents only potential possibilities to satisfy the social needs, but as regards the actual degree of realisation of these possibilities, of decisive importance are the material structure of the national income and the way in which it is distributed.

The aspect of distribution is particularly significant on the international scale, as the spontaneous type of technical and economic development stimulates the law of unequal development and widening the gap between regions of the highest and the lowest development. Its consequences are situations of increasing political tensions.

Moreover, the maximalisation of economic effects, as a means to increase the living standard, begins to be in collision with some qualitative aspects of individual and collective life, both as regards limited capacity of the terrestrial biosphere, and as regards limited capacity of the human time. Economic activity should be, therefore, considered not in isolation, but in its complex relations with the environment in a broad sense of the word and with other spheres of human activity that aim at such autonomous values as intellectual, moral, aesthetic, and creative satisfaction, cultivation of family ties, socialisation of the new generation, contact with the nature, and maintenance of unselfish and friendly relations with other people.

Consequently, unilateral tendency to maximalize the effects of the economic system /as a system of enterprises which produce the national income/ at the expense of other systems on which the economy is based /such as the bio-ecological system, the system of human population, and the social systems/ may bring about a menace of unpredictable consequences for the living conditions of contemporary societies, and still more for those of next generations. Therefore, a necessity arises to shift over to thinking in terms of an optimisation of the whole system of which the economic sub-system and even the whole human systems are only components.

2. The optimisation assumes different solutions for different spatial and temporal conditions. A question may be taken into consideration whether the capital accumulated in countries of the highest development is already sufficient in order to assure equilibrium between the high living standard and its qualitative components. Reckless, or sometimes even ill intentioned, would be a suggestion to stop the economic progress in the countries where an elementary condition of the quality of life, worth to a man, is again and again to rise above the level of a struggle for possibilities of biological vegetation.

Even from the point of view of countries of a middle economic development the present fashionable conceptions of the "0-Growth" cannot be considered acceptable. As a representative of one of these countries, I have personally a wide enough field of observation to be able to confirm this view. It is difficult to imagine a high quality of life without fulfilling such elementary conditions as providing all members of the society with spacious flat of high standard, full access to the medical assistance on a modern level, fairly good living conditions for elder persons, etc. A realisation of the mentioned, and other similar, well-deserved social ambitions still requires a considerable increase of material resources, even ~~at~~ an assumption that the least wasteful model of their use will be chosen.

In my opinion, the main problem consists not so much in a mechanical

setting back of the processes of economic development /in any case in the scale of the whole globe/, but in their conscious control and in directing them towards wider social aims.

3. All above said confirms the conclusions of the well-known Report of the Club of Rome which requires a general revision of the narrow-consumptive /narrow-utilitarian/ system of values that has been shaped on the basis of so-called Western civilisation, and that has to some extent an influence also on the Socialist countries. This involves, it should be added, also a far-reaching change in socio-economical structures and mechanisms which are to-day an obstacle to this re-orientation of values.

4. A further conclusion, this time pro domo sua, relates to the particular responsibility of the Socialist countries. There are in these countries no powerful groups of interests which foster an economically narrow class egoism. This gives special chances to arrange problems of the technical civilisation in a human way /both in particular countries and through establishment of a more just order in the international relations/. We are aware, however, of the fact that this chance cannot be realized automatically, only as a consequence of the socialization of the means of production. On the contrary, it requires an activation of the social policy which should find out and put into effect the new type solutions that would make possible to take advantage on a larger scale of the existing technical and economic chances in conformity with the manifold needs of the modern man.

5. None of the mentioned problems can be solved in an isolated way or only with forces available in a particular country itself. Re-orientation of the conceptions and the practical directions of development requires certain essential international agreements which should be preceded by investigations on the future in order to realize the distant consequences of the present dissipated activities, and to concentrate attention on those problems which solution requires a common action.

II. Criteria of the social progress

The main problem faced by the mankind in this situation, is the determination of criteria of the social progress, to which the progress in science, technique and economy should be subordinated. These criteria should be used as an instrument enabling a control of the conformity between directions of development and their desired course.

This is, at the same time, a most controversial problem, as the criteria, according to which the opinions about progress or regression are expressed, are in their very nature relativized: not only in respect to the period of time and ideas predominating in it, but also with respect to the tendencies of different social forces /and even to individual views/. No wonder, therefore, that the science is reluctant to become involved in these problems, using as an excuse the rules of positivistic methodology that recommend to putting the valuative judgments beyond the cognitive activity. It should be admitted that this methodological assumption has to some extent contributed to the development of social sciences, as it has led to precision and exactness of the analysis. On the other hand, it has paralysed their ability to co-operate in the purposeful transformation of the social life. This limitation is particularly evident in a situation when a general conviction begins to rule that the complex of technological, economic, and social changes must be controlled, as the rate of these changes increases so rapidly that their dangerous, disfunctional consequences are hard to be foreseen.

It cannot be surprising, therefore, that the category of progress begins to appear again widely in the fields of economy and sociology, and more particularly that it begins to focus the attention of the scientific centres dealing with forecasting and programming of the future.

The question is above all to know under what conditions the changes are becoming progressive, in what way the workers or, more broadly, the social forces /"acteurs sociaux"/ are able to take part in social transformations and to control them, how they can defend themselves

from arbitrariness and replace the imposed requirements of rationality by an open discourse on aims and means of the development" - says A. Tourraine "La société postindustrielle"/. In quoting and sharing this point of view of the scientist, whose attitude is, as I think, far from the Marxist one that I personally represent, I would like to emphasize the convergence of some essential reflections to which representatives of different orientations are leaning under the existing situation.

There is obviously no way to propose a set of criteria possible to be accepted by all cultural circles and by all social and political orientations. The following attempt is simply a trial to reconstitute some classification of these criteria which are in force - explicit or implicit - in circles of the left social orientation.

If the basic criterion of collective security is set apart, as being beyond any discussion and maintaining its absolute priority, I should bring to the foreground four main sets of criteria of the social progress:

1. Most often the social progress is in question in a context of the better satisfaction of needs of an individual. Not only the traditionally accepted standard of living is involved, standard which is determined mainly by the amount of incomes and accumulated material resources /the level of individual and collective consumption, the level of housing, conditions of recreation, social security etc./, but also what is more and more often called the quality of life which is additionally determined /apart from purely individual differences/ by the character of the natural environment, the organisation of social space, the level and type of education, the character of leisure, as well as the character and conditions of work. The last-mentioned point seems to be of particular importance, as the quality of life is expressed not only in terms of consumption, even in the most wide meaning, but it comprises also a degree of, let us say, creative self-realisation, a wide field for development of abilities and knowledge both in the professional

activity and at the leisure time.

2. In the previous approach the stress has been laid on the question w h a t needs are taken into account. The second aspect of the problem is contained in answering the question: w h o s e needs and to what extent. The objects of interest are thus disproportions in the living conditions of different social groups, or, if the problem is to be considered in a more wide sense, social discriminations and privileges of any kind. In this case, the criteria of social progress are the ideas of social equality and justice. When speaking about social equality, an evaluation is made to what extent all interested social groups are uniformly involved in the progressive changes in the living conditions.

With another aspect of the problem deals the idea of social justice. In this case, it is important to define to what extent the inequalities are deserved or demerited, and to what extent they result from factors being outside an individual or a group control.

It is worth noticing that a certain contradiction, but also a definite interrelation exist between these two ideas. They meet particularly in the postulate of a real equality of chances in all stages of life, i.e. of eliminating all those circumstances, external with respect to an individual, which are decisive in success or failure, irrespective of personal skill and work.

3. The reference of the third set of criteria is, in its turn, a question by whom is the progress consciously and actively created, and how broad circles of the society are allowed to control the course of changes. Here not only an active participation in shaping the place of work and local community is in question, but also, and this is particularly significant in view of an increasing centralisation of decisions of crucial importance, the real influence upon the macro-social preferences. In this approach, the social progress is measured

by the range of self-determination of the citizens and the degree of their actual influence upon the formation of collective life and, consequently, upon their own living conditions.

4. Finally, the fourth set of criteria is connected with the character of social coexistence on a macro-social and micro-social scale. In particular the degree of concordance or of conflict in human striving is taken into account. The system of social relations is valuated according to the degree of favouring the receptivity of the individual human being to socially accepted values, and vice versa, according to the extent to which the societies are open to the needs of the individual. From this point of view both extreme collectivism and extreme individualism must be valuated in a negative way.

Actually, the most difficult problem of the present times is to trace the subtle limit between the sphere of an absolute freedom of personal choices, and the sphere where the commonly established limits must be respected. Without such limits the social coexistence has never been possible, and under conditions of the contemporary technical civilisation those limits are becoming an imperative still more categorical, taking into account a multiplied range of dangers that may result to the more and more wide social circles from individual acts.

I am fully aware, of course, that the above classification has a conventional character, as all above-mentioned aspects of social progress are interrelated and they cross each other. On the other hand, I am far from an illusion that they easily can be brought into agreement among the real conditions of the present life and that a perfect harmony can be obtained. However, it is difficult to refrain from a reflection that, for people educated in the great tradition of humanistic Europe, a basic measure for valuation of the progressive character of the development is the extent to which it favours the multidimensionality of the human life. In other words: how far it allows to surmount contradictions, tantalizing modern societies, between civilisation and nature, equality and welfare and cultural development, consumption and creative activity, leisure and work time, private and public life,

personal freedom, and imperatives of the social coexistence and cooperation.

III. Selected problems of the social programming in Poland

Nationalisation of basic branches of economy enables to apply a new type of programming on a macro-social scale, based on the assumption of "good conductivity" between the system of socially accepted values and the trends, proportions and means of the economic progress.

This relation, however, is not a direct one. A main practical problem in the programming process is a translation of the general ideas of socialism /such as development of physical and mental forces of all members of the society/ into a language of concretized aims of long and middle term goals which should be used as operative outlines for directing the economic life. This is the task which has never before been undertaken on such a high scale in the history of our nation, and which is very difficult indeed.

First, the problem of hierarchical range of needs becomes more and more complicated, as the most elementary needs are being satisfied. To be sure, present knowledge about man, his natural, social and cultural environment, providing us with more and more premises for rationally justified choices, but gaps in this knowledge are still evident.

Secondly, every system of priorities is a result of a collision of various tendencies: "from an established system of superiorities the definite group interests arise, and every change of a priority meets with a resistance of some other group /E. Lipinski: "Karl Marx and Contemporary Problems"/. The mechanisms of articulation of these different group preferences, their conscious coordination, and translation into the language of general social preferences are not yet sufficiently shaped in Poland.

For the third, a great number of new elements introduced into the sphere of human life together with the increasing range of new techniques,

technologies and products, brings about, as it is generally known, a whole chain of secondary reactions. Their consequences often reveal themselves only after a longer period of time. The key problem is, therefore, to assure a proper control not only ex post, but also ex ante. This often requires toilsome and long investigations, whereas a "natural" tendency in the industry is a possibly quickest introduction of these pieces of news which allow the immediate economic advantages to increase.

Finally, no economy can be developed without instruments permitting to compare effects and costs. However, this is very complicated indeed when not the profit is considered to be the aim of economy, but the social progress. The effects include in this situation elements of different kind which cannot be reduced to a common, financial denominator. This requires an introduction of a system of new type of indices in order to value the economic activity. Moreover, in the classic economic calculation, all social effects - wages and pensions, protection of the environment, assurance of better working conditions - are determined in terms of production costs. Although the tendency to minimize those costs is mitigated by the more and more general realisation of so-called effect of productivity, which is obtained owing to satisfaction of social needs, this effect, however, becomes evident only in the case when the whole national economy and the long period of time are taken into consideration. The nationalisation of economy assures, no doubt, very favourable conditions for such an extension of the economic calculation, but both the methodology to lay down this calculation and the way to transmit it from the macro-scale to the micro-scale is evidently connected with serious difficulties.

The theoretical and practical solution of these problems in Poland has been delayed during some years owing to a strong tendency towards a peculiar autonomisation of the purposes of production. It does not seem possible to discuss the reasons of this tendency, or to explain its concrete manifestations in a short report. I wish only to state^{that} at the sources of political changes that occurred in Poland at the end of 1970 and beginning 1971 there was a determination to restore the proper

relation between aims and means of the development, to overcome the ways of thinking in immediate, economically narrow terms, and to initiate a perspective complex programming of the development of society and economy.

This is particularly evident in preparation of the perspective plan of the social and economic development of Poland until 1990 in which the starting point is the complex of social aims. During the last two years the working out of several perspective programs has been started, such as program of the socially rational spatial management of the country, program of the increase of the incomes of population, and of the perspective structure of consumption, program of the food economy, housing program, program of a shorter labour time, program in relation to the old people, program of the reconstruction of the educational system and development of culture, program of the social security, program of the protection of environment and of the health protection in a wide meaning. All these works tend to determine clearly the social preferences which could be used as a basis for choices in planning and to the realisation of which all purely economic decisions would be subordinated.

It is evident that such a course of programming works cannot take place without a broad social consultation realized through a continuous flow of impulses between centres of decision and the representatives of most important professional circles as well as through public discussions. Also the role of the scientific expert evidence has been considerably increased. Characteristic is the fact that the circle of scientific experts grouped in Poland at the centres of programming and planning has been considerably increased. It now includes both the representatives of technical and economic sciences and the representatives of social, medical and humanistic disciplines.

As regards social sciences, a new range of applications has been opened before them which I should call "social engineering through programming" in contradistinction to the established term, particularly by the American sociology "social engineering through manipulation". From the

THE ILLUSIONS OF A PERSPECTIVE ON "NEEDS"

By André Clément Decouflé

and

Nicole Schwartz

Laboratoire de Prospective Appliquée

Association International "Futuribles"

"We are steeped in dreams of consumption satisfactions, fettered to objects as well as everyday residues; and the logic that rules this attitude -- which Freud first revealed in The Interpretation of Dreams -- has not yet been explained. We are foundering in naive psychology and the key of dreams. We believe in consumption; we believe in a real subject, matured by needs and confrontations with real objects, sources of satisfaction -- a vulgar, metaphysical thing which enlists psychology, sociology and economic science as its accomplices. Object, consumption, needs, aspiration -- these concepts must all be discarded because we only theorize the evidence of daily life as one of the dreams or its manifest discourse. It is the process and work of the dream that must be analyzed to re-discover the unconscious logic of another discourse. We must re-discover the processes and the function of unconscious social logic under the consecrated ideology of consumption."

Jean Baudrillard: Pour une critique de l'économie politique du signe, Gallimard, Paris, 1972, pp. 268, p. 59.

The concept of need refers not to "human nature" but rather to social structures and methods of production, consumption and destruction of the material and non-material which mold them, as well as the ideologies which justify them. This very banal proposition casts doubts on the legitimacy and operational interest of the reference to the "needs" in view of a reflection on the development process of human societies -- at least beginning when the concept of need is no longer considered simply a convenience of language.

Based on an analysis of the most significant criticisms recently voiced, particularly in France, we propose to suggest an approach to the concept of need which is quite different from the social perspective to be characterized as the conflicts-competition juncture between the transformations and permanencies affecting modes of life and the spectrum of values peculiar to every society and culture.

For some time, the concept of "needs" has embraced both an existential idea so common that there is no need to define it, and one of those basic "notions" (1) interminably debated by members of the Schools in restricted circles. "That (represented) nothing, but that other (produced), this (meant) nothing, but that (worked)" (2). Moreover, its usage, extensive as it was, did not warrant any specific analysis; in the main, it was self-propelled.

Today, the new factor is not the emergence of a satisfying definition or an agreement among the Schools (3), but rather the position this "concept" has taken on two levels:

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- (1) We could apply to the notion of need what Eugène Dupreel once wrote on the notion of cause: interpreted in its "elastic" meaning, infinitely extensible, as a conglomeration of desire, aspirations, expectations, lacks, feeling, necessity, etc., it "evades every critical refutation, yet seeming to be indispensable to the improvisations of ordinary talk. One would only avoid it by the futile subterfuge of a synonym" (1933, p. 7-8).
 - (2) To quote Gilles Deleuze and Félix Guattari (1972, p. 130).
 - (3) As at the time of EPICURE, some continue to find fault with primary and secondary needs in their search for a hierarchy of "values," which itself would establish a sort of moral code, with all the possibilities for variations which such a scale implies. This goes from excessive evaluation of the primary needs (Henri Laborit, 1970, p. 42 et seq.), re-baptized man's fundamental needs," to the defense and illustration of progress based on the growing satisfaction of increasingly socialized needs, hence ennobled (Abraham T. Maslow, 1970, Paul-Henri Chombart de Lauwe, 1970, etc.). Considerable efforts at reflection, sometimes abetted by empiric research of notable dimensions, are persistently dedicated to this problem, phony par excellence. "The expression 'essential need' makes no sense, because in practice, people need what they desire. Needs are less determined by homo sapiens' biological demands than by the social environment he lives in, especially the environment in which he has been brought up" (René Dubois, 1972, p. 182). For the relationship between needs and desire, cf ensuing text.

a) on the practical level, first as mediator between the system of producing and the system of distribution "scarce" goods and services among solvent individuals. This fundamental law governing the organization of the capitalist market is now so universal that one could take amusement by making an analysis without any effective significance; this would consist of distinguishing "needs" according to

- whether they are directly related to the exercise of onerous exchanges -- needs for "prime necessity items," needs for "comfort", needs for "luxuries," etc.; or
- whether they have access to the market only via the mediation of ideological justifications, themselves arising from the exercise of onerous exchange -- needs for "security," for personal "accomplishment," for "communications with others," etc.

b) on the "theoretical" level in the social sciences studies ("motivational" psychology, psycho-sociology, urbanism, social economics, etc.) with the increasingly avowed goals meant to measure and define needs, their diversity, importance, dynamism, etc. towards establishing a correlation between goods and available services on the market and present and future demands. The best example is naturally given by the "market studies" which, apart from this function, serve the practical purpose of finding means of acting upon "needs" to abet the growth and diversification of the "demand".

The point of departure of all the confusion attendant upon the notion of needs lies in the implicit or explicit recognition of a distinction between two separate entities:

- "man," such as he is most often defined by the "human" sciences, i.e. man reconstructed, beginning with a series of individual and collective functions appraised according to the available quantitative data (the overall categories usually followed: framework of life, anatomical functions, professional and family activities, education and training, civic and collective pursuits, pastimes and cultural interests, etc.); and
- the "world of objects," taken in the broad sense of the term, i.e. material and non-material (services) goods, in turn separated into series, quantities, measures, etc.

The problem thus posed -- to know the existence of a series of subjects facing a series of objects -- can only be resolved by the intermediary of a middle term, a "magic foot-bridge" (Jean Baudrillard, 1972, p. 70), which will be called "need" and defined as a force that impels a subject to appropriate (or hope for, demand, even refuse, etc.) an object.

This primary animism, focus of the dominant ideology of merchant and industrial capitalism, provokes a flux of "empiric" justifications, with a ritual, not scientific, function: indices of satisfaction and dissatisfaction, indicators to show levels of benefits, aspirations, expectations, etc.

Satisfaction, signifying a need fulfilled, and dissatisfaction, signifying an existent need, are traced via opinion polls, measures, behavioral patterns, attitudes, etc.

What does it matter if these research efforts wind up in common places, and forecasts are belied by events? The theories of need involve the difficulties of deciphering enquiries, and continue imperturbably to refine techniques for manipulating data which make it possible to make the satisfaction-dissatisfaction (1) duality play the role which is definitely its own: to measure the performances of the industrial system and increase trade.

Hence, on the "methodological" level, the uninterrupted production of new or renewed need categories, possessing the "qualities" of the two terms (groups of individuals and series of objects), which they link among themselves, or:

- the measurability (thresholds of satisfaction and dissatisfaction);
- finitude and clear distinction: a name and definition for each need;

(1) The index of satisfaction was utilized alone for some time, after which attempts were made to define it exactly by introducing its contrary so as to verify one against the other. This is one of the biggest tautological "reasoning" operations undertaken by the human sciences in the past few years. We add that the problem of measuring satisfaction and dissatisfaction is now the goal of a new effort at analysis, linked with the selection and quantification of "quality-of-life" social indicators. Cf Angus Campbell, 1972, as an example.

- universality: each need is common to the greatest possible number of individuals, therefore subject to programming;
- cumulativity: needs can multiply within the same group without conflict.

At the end of these endlessly repeated manipulations, at this point the lists of needs (interminable, the needs multiplying unremittingly) reflect the lists of objects (goods and services) available on the market as if by fortuitous chance. This would be ascribed to the glory (or failure) of the capitalist production-distribution system if the flow of goods were not "miraculously" regulated in conformity with the respective levels of the consumers solvency.

Every consumer knows that, in any consumer society that admits to being such, they are animated by an upward spiral, yet that inflation puts the "aspirations" and "expectations" of the so-called "less-favored" categories into good order.

A miracle indeed! The growing satisfaction of needs among the mass of solvent persons manifests the diffusion "of aspirations, supposedly universal, among the petty bourgeois condition" (Jean-Claude Chamboredon and Madeleine Lemaire, 1970, p. 15). The whole "social habitat" policy (in "big housing complexes," generally arrayed with "collective equipment") thus rests -- in France, for example -- on the belief in hopes for a kind of "social engineering," which would miraculously awaken aspirations towards mobility, hence at the utmost, "a deeper conviction of the universal aspiration for the average condition -- one strong enough even to encourage those above this level to return to the ranks of blissful mediocrity. This sociologists' Utopia -- possibly expressing one "intention" of the construction policy behind the great complexes -- is very close to the discourse held on some subjects which, confident of the progress promised the working class through contact and by example of the middle classes,^{is} the 'instrument' of a civilizing policy in the great complexes (idem, *ibid*, p. 15-16).

The political economy of need (1) is entirely founded on a misunderstanding allied with a rejection (2).

First, a misunderstanding concerning possible quantification and planning (today called programming) of the utility-value duality, beginning by determining the thresholds of satisfaction and dissatisfaction (universe of supply) and levels of aspirations and expectations (universe of demand). The quantification and planning of needs are, in fact, a dangerous ambiguity insofar as:

- in a strategy to maintain the relative scarcity of goods and services available on the market (typical capitalist strategy), and
- in a management strategy of total lack of certain goods and services overlooked or mishandled by the plan (typical socialist strategy)

they establish and legitimize the control wielded by the market overlords or planners over the flow of scarcity and stocks in short supply; in other words, their power.

The language of the sciences and society must cease, once and for all, to dupe itself as it does endlessly. "It is absurd", writes Jean Baudrillard (1972, p. 57), "to speak of a consumer society as if consumption were a system of universal values shared by all men because it is founded on the satisfaction of individual needs. It is, in fact, an institution and a morale, thus an element in the strategy of power in every society that has ever existed and will exist."

It is time to put an end, once and for all, to the myth of abundance in the capitalist societies, which are not above describing themselves as "advanced". Abundance is passed off as a promise when, in fact, it is viewed by the market overlords as a menace to limited resources and to their command of power -- a menace so ominous that it causes a

(1) The very notion that need is scrupulously labelled by the economists as a source external to the constitution of their own language (see, for example, Jean-Marie Chevalier, 1970, p. 534; also, for levels of aspirations and expectations, François Perroux, 1964, p. 414-415). We wish to point out that Alfred Marshall who, like most economists, assimilated needs and desires, had clearly grasped the poverty in the notion of needs, and the necessity of going beyond it: "While wants rule life among the lower animals, we must turn to changes in the forms of efforts and activities in our search for the keynotes of mankind's history" (Principles of Economics, 8th ed., III, 1, 2). The phrase "changes in the forms of efforts and activities" of men can serve as a convenient basis for defining what we propose to call "desires."

(2) In harsher terms, on deception allied with impotency.

permanent emergency maintenance system of scarce resources, of which the most classic instrument is the institutionalized destruction of consumer goods and services. This institutionalized destruction (1) takes various forms, sometimes subtle. It shares few traits with the ritual destruction of goods, notably "vital" foodstuffs, practiced in the "traditional" societies. To begin with, it is part of built-in obsolescence and hired services, always fragmented and inserted into a chain of upstream and downstream services, passed off as necessary to the client's satisfaction. Naturally it is hawked by blatant publicity, which flourishes even in those regions where a system of permanent values and stability would seem to prevail (2).

But again, in view of the constant renewal of the market exchange, generalized destruction is only the substance of a deeper strategy: to maintain a rate of relative scarcity. The "vices" nurtured within the consumer society that drive it to this frenzy of destroying and renewing goods are by no means unknown to us. Again, power must be defined in this society as the exercise of scarcity management. Administrating and programming scarcity on a long-term basis are what give the market overlords their prime source of power. (3)

Even in a society with a huge capacity for producing goods and services, as in the evolved system, that capacity is not infinite. Reduced to its most elementary expression, it is the essential theme of today's

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- (1) Cf. André-Clément Découflé and Paul Vieille, La "qualité de la vie" et la prospective sociétale de l'échange marchand dans la société post-industrielle; André-Clément Découflé and André Berquin, Prospective de l'habitat et destruction de l'espace (1974)
 - (2) This is the oft-cited American example of the marriage union which, according to "good form," must be renewed (redeemed) every year.
 - (3) The link between the existence of scarcity (or relative shortages) and the exercise of power is clearly seen in the Marxist-Leninist decline-of-the-State theory, according to which State power wanes and disappears as the communist system of production and distribution gains headway, with its "to-each-according-to-his-needs" principle. There are no more "needs" when they can be satisfied without the intermediary of power, i.e. the system of relative production and distribution shortages in the market society and in the first-generation socialist society.

mounting debate on the limits to growth. We know their ritual conclusion in the form of re-discoveries with one of the most ancient myths of political economy: the stationery state, in which production, consumption and the destruction of goods would be subjected to more and more restrictions, thus to realize a minimal balance between "needs" and satisfactions.

There! one will say, it would mean nothing less than to organize the conditions for eliminating the powers of the market overlords and those emerging with a system of collective arbitration, where the balance of the social body's strictly economic functions would be subjected to a rationality foreign to that of the market exchange. At the utmost, one could show that the currency medium becomes wholly useless in a stationary state. Let's leave these problems to the professional economists and probe another element of the dossier, management of the "natural" environment. One of the postulates of the thesis on the limits to growth is whether these limits are imposed by the vast and sometimes irreversible degradations inflicted on the natural environment by a growth that fails to safeguard its essential elements.

Who does not understand that to pose the problem in these terms signifies legalizing a new scarcity, our traditionally "natural" resources? A trite observation, nevertheless it is interesting to find traces of it in the history of the most classical juridical and economic thought. A solid tradition was established by Puffender (Le droit de la nature et des gens, 1771), who wrote: "The upper reaches of the air, the sky and the celestial bodies, like the vast ocean, are not subject to ownership; thus, no one can legitimately put a price on them, although they be greatly useful to human life." Jean-Baptiste Say (Traité d'Economie Politique, 1803, Vol. II, p. 124), said: "The earth is not nature's only agent invested with destructive power; but it is the only one, or almost, that man appropriates for himself, hence he has been able to appropriate its benefits as well. The water of the rivers and seas, with its power to run our machines, sail our boats and feed the fish, also claims a productive power. The wind, which moves our windmills, and the heat of the sun work for us; but fortunately no one can say, 'The wind and the sun belong to me, and I must be paid for the services they render.'"

It was left to Ricardo to hazard a highly subversive thought: "Yes, the air, the water, the elasticity of steam and atmospheric pressure could have variable and limited powers. If anyone could appropriate them, all these agents would yield an income which would rise progressively as their special qualities were utilized" (Principes de l'Economie Politique et de l'Impôt, 1817, chapter II). With exemplary clarity, Ricardo established the rule that appropriation of "natural resources" is a function of two fundamental elements: their relative scarcity and their integration into the process of industrial production, which forestalls their subjection to the trade market. Again he says in Les Principes: "The air and the water, which have such great utility and which are so indispensable to man's existence, cannot, in ordinary cases, be exchanged for anything else. Gold, to the contrary, so little useful by comparison with air and water, can be exchanged for a vast quantity of merchandise."

Utility, therefore, is not the measure of exchangeable value, however essential it may be. If an object has no value or, in other terms, if we cannot use it to serve any purpose or draw some advantage from it, then it can claim no exchangeable value, however scarce it might be or however much work were needed to acquire it.

"Once things are recognized as useful in themselves, they draw their trade value from two sources -- their scarcity and the amount of work needed to acquire them" (Les Principes, I, 1).

As industry gradually takes form, trading power will pass from the lords of the earth and fire to the masters of air and water. Of the four telluric essences subject to human toil, two will assure the triumph of the machine, and the other two the domination of nature-goods -- triumph and domination, with the market as the single focus, a complete focus, enclosed within itself in the exercise of the activities deployed there and to the extent of the results they show.

To be sure, the ultimate destination of quantification is indeed to bear witness to the figures of the market system's performances, that is, to disguise the destruction of nature and human life in mounting production, in production "gains," in expanding the process of consumption, etc.; in short, to mask the conquests of destruction and death behind the busy swirl of trade.

The works of the development economy and, more recently, of the poverty economy in the "rich" countries have replaced in honor the convenient distinctions between non-criticized notions, such as "needs-obligations" and "needs-aspirations" (Jean-Marie Chevalier, 1971, p. 146 et seq.), or again, "survival needs" "comfort needs" and "needs of being" (René Passet, 1966, p. 534 et seq.). These distinctions are commonly considered as operationally ineffective; at least they demonstrate that along with a "poverty of having, which corresponds to the non-satisfaction of the most elementary needs, exists a poverty of being, which results from what is given to the need of having as an absolute priority in relation to the needs of being" (Jean-Marie Chevalier, idem, p. 148). Thus it is, primarily in the capitalist and neo-capitalist systems of production and distribution of scarce resources. Hence, within these systems, attempts have been made to define "new political economies" -- the "welfare" type (Philippe d'Iribarne, 1962-73), and the "desire" type, which we can perceive in certain works of the North American radical economists (see, for example, Howard Sherman, 1972, p. 176 et seq., and Benjamin Ward, 1972, p. 193 et seq.).

Clumsy as the works available today are, their shortcomings, their "scientificity" gaps and their excess of societal romanticism, it is precisely at this point that the political economy of need falters and refuses to act as an economy of desire, that it obstinately insists on being and remaining an economy of non-quantifiable provision ("need" being referred to the potentially measurable concepts of level, threshold, limit, etc.) rather than an economy of the definitive, the non-quantifiable radical (1). Desire has no level, threshold or limit, etc. It only knows rupture and drains.

Every effort (unconscious) of the bourgeois economy consists of theatricalizing desire (beginning with and including rigging out psychoanalytical

(1) That is, of the non-recuperable, the definitive, the radical not manipulatable by the market or the plan.

costumes; desire is played out in the theatre of psychoanalysis, it is disguise). "Thus, it is need which is defined by the relative and determined lack of its own object, while desire appears to be what produces the phantom and the product itself, detaching itself from the object but also doubling the lack, carrying it to the absolute, making an incurable insufficiency of being," a "lack of being, which is life"; hence, life presented as leaning on needs, the productivity of desire continuing to use needs as its basis..." (Gille Deleuze and Félix Guattari, 1972, p. 33) (1).

Desire is first. It comes before not only "need" which, being what it is, would not naturally suffice to qualify it, but especially at the nodal juncture of the Ego of society and history, which is the Freudian Oedipus. And the question posed by the universe of desire is no longer -- as on the wretched level of the small world of needs - the "what does that mean?" It is the "how is it going?" (2)

(1) Hence the extreme ambiguity (according to Jacques Lacan, for example) surrounding the reintroduction of the idea of lack into the theory of desire. One thought to have finished with "needs." Here they are again, always ready to lend service to the system. But desire is neither lack nor impossibility nor quest nor appeasement nor even pressure. "It is not desire that leans on needs; to the contrary, needs derive from desire. They are counter-products in the real which desire produces. Lack is a counter-effect of desire. It always keeps close to objective conditions of existence, it weds and follows them, it does not survive them, it moves with them. This is why desire so easily dies while need measures the removal of a subject who has lost desire by losing the passive synthesis of these conditions. Need, as a practice of the void, has no other meaning: to seek and capture the passive synthesis wherever they are" (Deleuze-Guattari, 1972, p. 34).

(2) We are no longer so far from the question left unanswered by Alfred Marshall: "How does it work? is the only question" (Gilles Deleuze and Félix Guattari, id., p. 213).

Desire is originating (in the logical sense) but not original (in the temporal sense). It is at once inherent in all human beings and contingent on each culture. Its destiny is regulated by social organization, more clearly by the system of production and distribution of needs, or what we authors call the *socius*. "The problem of the *socius* has always been to encode the flows of desire, inscribe and register them, to take care that there is no flow which is not stopped up, channeled, regulated" (*idem*, p. 40). The capitalist system of producing and distributing needs has achieved the most complete form of manipulating, codifying and regulating the flow of desires; hence capitalism's role in producing universal schizophrenia, i.e. instituting the rift between desire and its appeasement as an originating societal rule, substituting at the origin the schize for the flux. An operation vital to capitalistic procedure, since "desire ignores trade, it only knows theft and bestowal".

Here how can we not recall the classics of the bestowal and gratuity economy (François Perroux, 1960; Georges Bataille, 1967; Bertrand de Jouvenel, 1968)? How can we not recall that the very word "need" is not part of their usual terminology, but only of their combat (1).

It is indeed not by chance that the word "perspective" has hardly been used in this text thus far. To what purpose, since "perspective" is to no degree the "science of the future"? (Bertrand de Jouvenel, 1972)? It is the form of social criticism demanded today by the "development" stage of economies and societies (capitalist first, "socialist" as accessory), called "advanced."

From this point of view, a dossier would be half open - the dossier substituting the idea of "collective functions" for "needs" as the norm

(1) When, for example, it comes to noting "that the process of technological advances is not ruled by a mysterious clockwork making it answer to 'societal needs' so that practical inventions seem more propitious to the mitigation of the pains and the enhancement of life's charms, but that we assign it this role a posteriori; it is not its a priori principle" (Bertrand de Jouvenel), *op. cit.*, p. 221).

for the intervention of collective arbitration in a market system partially regulated by the plan (France, 1964--1972). As we shall see, this substitution is more than a change of vocabulary: it entails a decisive shift of the role and function of public opinion in the economic sphere.

Despite its imperfections and equivocations, the distinction between collective needs, still termed "essential," and individual needs, defined by reference to the evolution of private consumption, has long constituted in France the dividing line between private initiative and public decisions -- more broadly, between market and plan. This distinction, shown in a document on perspective (Réflexions pour 1985, 1964, p. 61 et seq.) again 12 years ago as fundamental, is now abandoned today (La France face au choc du futur, 1972, p. 103 et seq.). The 1964 document, maintaining that the State must be the prime mover and guarantor in satisfying "collective needs," drew the natural conclusion that arbitration on "the means of appropriating scarce resources" must belong more than ever to the public power, and to it alone. The basic example it cited was that of "growing needs in space of every Frenchman" (Réflexions pour 1985, p. 61). The 1972 document certainly doesn't go so far as to take an explicitly contrary view of such propositions, but on the basis of an analysis of the essentially contingent, shifting character of the "aspirations," "demands," "wishes," "requirements," "choices," etc. (the term "needs" is practically abandoned), it assigns a completely different role to public power: "not to run counter to the French model of social organizations, but to enact its rules" (1), favoring the "development of multiple centers of experimentation" (1985, La France face au choc du futur", p. 153). The examples suggested concern primarily the arrangement of space, housing and urbanism.

Undoubtedly an explanation of this privatization of collective functions

(1) One such formula, we believe, needs no commentary. Let us remember only that it figures largely in a series of proposals for action collected under the title "Towards Mastery of Social Change" (1985, La France face au choc du futur, p. 152 et seq.).

by discussing the extension of the "reign of profit" without brakes or limits would be too brief. In return, it seems to proceed from an evolution much deeper on the level of the respective efficiency of competence, of know-how and of the results obtained by the public services (in the institutional sense) and the private organizations (especially big corporations, whether multinational or not). Valid for the United States and Canada, the disillusioned judgment of a Canadian economist also applies to a great extent to a country like ours, despite the efforts of a French-type planning system. "The evil definition of the collective objectives and the failure to allocate legal responsibilities to the bureaucrats make the Nation-State insensitive in many ways to the imperatives stammered out by the collective" (Gilles Paquet, 1971, cited by André-Clément Découflé, 1972, p. 1296). This is an overly general formula, which should be forthwith corrected; "the imperatives stammered out by the collective" are no less, indeed, than the "needs" expressed by the individuals and the solvent socio-professional categories through the only type of organized concertation known by the "advanced" industrial society -- the market.

Urban planning, low-cost housing, the security of property and persons (up to and including control or urban crime) are already assured in a certain number of North American cities by private companies.

Everything seems to indicate that the same thing will happen progressively in France if present "trends" continue; the delicate distinction between collective and individual needs -- once the responsibility traditionally shared by the public and private powers -- is vanishing in the "dynamism" of the great corporations. The overwhelming triumphalism of the alliance between market and industrial rationality is beleaguering the whole small world of needs, yet proclaiming aloud its special capacity to "satisfy" them. Once more the immeasurable universe of desire remains: an expedient of low intellectual capacity or a possible refuge of a new freedom?

ASSIGNMENT: IMPROVEMENT OF MANKIND

By Yehezkel Dror
Professor
The Hebrew University of Jerusalem

1. This is a speculative discussion note, which poses some main propositions concerning transformation of humanity as a goal for action. The main purpose of this note is to stimulate discussion and debate. To serve its purposes, this note presents some main propositions in the form of extreme theses. Hopefully, I will be equipped after the Rome Conference to write a detailed and more serious paper on the subject. All comments and reactions will be welcome -- before, during and after the Rome Conference.
2. Mankind stands on the threshold of a new capability which poses before so-called homo sapiens the hardest choice that can be faced by a self-reflective species; because it seems that within the life span of this or the next generation, we will be able to change the characteristics of our own species. This surely is one of the greatest breakthroughs that can be imagined, a breakthrough which poses also one of the hardest of all moral and political dilemmas. Once the capability to change the human species is developed, the question if and how to use this capability in order actually to attempt creation of homo superior moves from the world of science fiction and science horror into the agendas of public policymaking. There is still some time for considering the issue before it becomes acute, but surely for so critical a decision, advance thinking and soul searching are appropriate.
3. As long as no means which can produce Homo Sapiens Vera are

available in the foreseeable future, consideration of policy alternatives oriented towards radical improvement of mankind and its transformation -- is unnecessary and, perhaps, undesirable, other than as philosophic exercises or science-fiction sweeps of the imagination. But policy means which may permit radical changes of humanity as a biological species will soon become available. Such means will, apparently include the following:

- a. Chemical means, such as psychopharmacological materials.
- b. Slow genetic change, through selective breeding.
- c. Rapid genetic change, through genetic engineering.
- d. Capacity augmentation, for instance through direct neural connection with advanced computers.
- e. Behavioral changes, such as through programmed and very intense education from very early (perhaps pre-natal) age.

4. Any value system which postulates limits to the permissibility of human interference with life will tend to reject accelerated transformation of humanity with the help of most of the above-mentioned instruments. I think that there is no contradiction between policies oriented towards radical change of present humanity and most metaphysical and religious systems, because directed change of humanity may be regarded as a fulfillment of transnatural conceptions of the mission and goal of present, imperfect, humanity. But if any

value system rejects by dogma (a term which I do not use negatively) action to change the basic features of humanity by specific means -- then there is no scope for further discussion of this issue with those having such a value system, which one can either accept or reject. I proceed on the assumption, that we do not reject consideration of action to improve humanity by species-changing means because of value reasons.

5. Having set aside a priori rejection because of beliefs, another a priori barrier must be considered, namely anxiety. Humanity, as individuals and as a group, will surely exhibit strong survival forces. These will take the form of abhorrence from the creation of "monsters" and fears from the unknown characteristics of Homo Superior. Surely, such feeling will prevent (and rightly so, in my own opinions) experiments which directly endanger human beings, such as radioactive exposure of large numbers of volunteers, in order to accelerate genetic mutations. But anxiety may also stop careful and controlled experimentation.

6. Another consideration relates to the unpredictability of results of attempts to create a different human species. Uncertainty is not only a result of the technical difficulties to predict the results of different interference instruments, but has a more fundamental reason: if and when a different human species is created, its characteristics are qualitatively unpredictable. Even if we succeed

to control results so as to get "better intelligence", "more moral sense" etc. -- we cannot know what this means and what this implies.

7. Uncertainty is very high in respect to individuals. It is even higher in respect to a society composed of beings different in some respects from the average contemporary human person. Let us assume we had a society composed of persons such as Leonardo De Vinci, Freud, Einstein, Pericles, Napoleon and Shakespeare. Even if we can predict and understand the individual genius (which we cannot), there is no basis whatsoever to predict the features of a society composed of persons who existed historically only in statistically insignificant numbers.

8. My conclusion is, that any attempt to change basic features of humanity constitute a step into different dimensions, about which we can say nothing reliable. Therefore, readiness to embark on such an activity involves considerable risks of undesirable consequences in term of contemporary values. A high readiness for risks is, therefore, a requisit for embarking on the adventure called Homo Superior.

9. Preferences for risk (or, to use a modern technical term, "lottery values") ^{are} ~~as~~ a matter for value judgment. Nevertheless, there are some principles that can guide us in our choice between a conservative and low-risk policy and a radical, high-risk policy. In general, the less one is satisfied with the present and foreseeable

future, the less is one impressed by the risks of endangering what exists; and the more one hopes for breakthroughs with the help of new policies, the more will one be ready to take the related risks. (See Yehezkel Dror, Ventures in Policy Sciences. N.Y: American Elsevier and Amsterdam: Elsevier, 1971, chapter 24). Therefore, some aid in deciding on preferable risk propensities can be received from evaluating the present and foreseeable situations without radical discontinuities and considering the hopes of a radical new approach.

10. It is not very difficult to justify a pessimistic view of present humanity, which in its action should be regarded as *Homo Sapiens Falsa*. The history of humanity is one of suffering, misery and unhappiness on the individual level, with accumulated slow progress and some accelerated jumps. *Homo Sapiens Falsa* can be diagnosed as having serious inbuilt errors, such as: Tendency to oscillage between collective madness and individual egocentrism; inability to satisfy basic drives without hurting others; limited intellect; a tragic tendency to show self-sacrifice mainly for collective goals involving aggression towards others; and inability to handle moral dilemmas. Social cooperation seems unable to overcome these weaknesses without substituting for them even worse phenomena, mainly collective crime of large proportions. It is hard to see in history any trend at work which provides a factual basis

for hope that these features are accidental and will disappear somehow.

11. In some opinions, more serious may be the inbuilt incapacity of the human mind to handle fundamental issues concerning the nature of the universe, the nature and purposes of life and the origin of existence. Religious answers adopt the answer of God to Job, acknowledging the limits of the human mind and requiring him to accept faith as an answer fitting the very limited human mind. Clearly, only a humanity able to comprehend new dimensions has a chance to provide answers to the fundamental issues of human existence.

12. The attractiveness of trying to create Homo Superior is the hope to develop human beings who will overcome the weaknesses of Homo Sapiens Falsa on the individual and collective levels and who may be able to comprehend better the fundamental issues of human existence.

13. If I adopt a behavioral-predictive orientation, I think I would predict that experiments to change radically the nature of human beings will be strongly resisted, but will be tried out in individual laboratories -- perhaps within military research. But this paper is not a predictive one. Rather, I want to pose an issue for explicit, responsible and conscious exploration, analysis and decision.

14. My private feeling is, that experimentation on improvement

of humanity should be engaged in, but in a careful way. If I had one hundred million dollars to use for humanity as a whole, I would devote half of it to an Institute for the Improvement of Mankind which would carefully explore the issues of transforming humanity into Homo Superior (the other half would go to improving the capacity of humanity to shape its future, given its present basic characteristics, through improved policymaking).

15. Let me remind the readers that this is a speculative paper written in one of my altered states of consciousness. When we meet, we can decide together whether the issue posed in this note should be taken seriously or should be displaced till reality overtakes us.

THE MASS MEDIA OF ENTERTAINMENT AND HUMAN SURVIVAL

By Roderic Gorney, M.D.,
Psychiatrist, and

Gary Steele, M.A., C. Phil.

INTRODUCTION: Urgently needed for human survival is a means of influencing large numbers to put into rapid action those measures which could neutralize such menaces as pollution, overpopulation, and violence. The long-term goal of our research is elucidation of the possible role of the mass media of entertainment in meeting this need. The purpose of this paper is twofold: (1) to present our preliminary appraisal of this possibility and (2) to propose a plan whereby mass entertainment could do this while its freedom is increased and enhanced despite an atmosphere increasingly conducive to censorship. We propose integrated explorations of the impact of the mass media of entertainment on attitudes, values and behavior, bringing coherence into existent scattered information.

REVIEW OF PERTINENT INFORMATION: Today's entertainment media have added to the ancient Roman function of diversion the deliberate inculcation in enormous audiences of attitudes, values, and behaviour that someone finds desirable. Large sums have changed hands to have leading characters in movies or television series smoke cigarettes or drive a particular automobile. These are entertainment features, not commercial messages. But sales results leave no doubt in the "sponsor's" mind as to the effectiveness of his covert advertising. Curiously, professionals in motion picture and television often deny that their product changes audiences, insisting that their creations act merely as diversions. (1)

Little systematic research has been done to elucidate what effect mass entertainment produces, or how such effects are achieved. (2) Almost nothing is known about how to use such a powerful modality to influence deliberately the attitudes, values, and behaviour of people concerning problems which directly threaten survival of the human species. Lack of precise information has not stopped efforts to exploit such uses of mass entertainment. From the Nazi spectacle, "Triumph of the Will", to the American army training films, "Why We Fight", and the current television series, "All in the Family", the assumption is made that the impact of mass entertainment is enormous. So pervasive have the media become that one commentator has proposed that low levels of media use be considered as deviant behavior, citing empirical associations between low levels

of media use "and other acknowledged 'deviant' states..."(3)

Students of mass communication bemoan the lack of "conceptual coherence" characterizing their research. (4) Furthermore, research results often are contradictory and unreplicable. (4) For example, a large body of evidence casts doubt upon the "catharsis" theory of the impact of violence in the mass media. (2,4,5,6) However, Feshbach's field study, one of the few attempting to measure cumulative effects, turned up results tending to support that theory. Subjects exposed to television violence over a period of time exhibited less aggression than did subjects not exposed to television violence, and those who were initially the most aggressive showed the most marked decrease in aggressive behavior. (7) On the other hand, laboratory studies, such as those by Bandura and by Berkowitz, assert that children (appropriately predisposed) can be stimulated to aggressive behavior by watching aggressive behavior. (5,6) Joseph Morgenstern asserts that "Supporting documents from the Report to the Surgeon General...give us the strongest suggestions to date that violent TV programs can have harmful effects on large groups of normal kids." He quotes two scientists: "I believe that the most reasonable conclusion is that there is a link between televised violence and aggressive behavior for the majority of normal children," and, "Now we can see that there is a significant causal relationship."(8)

Research designed to examine cumulative or long-term effects of repeated exposure to the media is specially scarce. The few long-term field studies yielded different and/or more unexpected results than the laboratory experiments. Feshbach's study is one example. Another is the Hovland study, which found that World War II Army training films sometimes had the opposite rather than the desired effects on subjects' attitudes, and that there were delayed " sleeper " effects that sometimes did not become apparent for several months. (9) DeFleur cites two field studies which had exactly opposite results with respect to the degree of fear aroused by a message and the degrees of compliance with its recommendation. (10)

Hovland's results support a major assumption of ours, that the media affect attitude and value changes also in adults. But most of the work on media effect

has focused on children and adolescents on the reasonable assumption that they are much more likely than adults to be influenced in important ways. The first extensive investigations of media effects, the Payne Fund studies of the early 1930's, were "especially concerned with the effects of motion pictures on children".⁽¹⁾ Forty years later, it was 7,000 children on whom were obtained the data included in the Surgeon-General's report on the effects of television violence.⁽¹¹⁾ We suggest that a similar modern consideration of the effects of the mass entertainment media on adult attitudes, values, and behavior is much needed and long overdue.

An example of pertinent research designed by the authors is a pilot study utilizing 60 adult subjects randomly selected from a pool of 200 and divided into two matched samples which will be exposed to entertainment films embodying opposing values. An attitude/value survey instrument will be administered before, immediately after, one week after, and one month after the stimulus. In addition, measures of physiologic response (GSR) and behavioral response to frustration will be made. We hypothesize that a divergence in professed attitudes, values, and behavior will occur between the two groups, decreasing with time elapsed after the film-viewing stimulus. A preliminary questionnaire will gather demographic and media-use information about subjects, to be correlated with attitude/value measurements along six dimensions: relationships between the sexes; relationships among the races; rights of property vs. rights of human beings; material aggrandizement vs. psychosocial attainment; human cooperation vs. human competition; violence: acceptance vs. abhorrence. Factor analysis of the correlation matrix for the items in our basal measurements, mean attitude/value index score comparisons over time, and analysis of variance for demographic and media-use variables will be performed. The full results and details of this study, part of a comprehensive research program, will be published when completed.

DIMENSIONS AND IMPACT OF MASS ENTERTAINMENT: The old standbys for changing human behavior are coercion, rejected in principle because it is always undemocratic, and education, rejected despite principle because it is so often uninteresting. For today's challenge we need a device that is neither dictatorial nor dull. And that device is--entertainment.

Each night 75 million Americans eagerly expose themselves to television entertainment. Each week 40 million Americans view entertainment motion pictures. Every month well over a billion human beings around the world are influenced by such experiences.^(12,13) No educational program, no periodical, no book except the Bible ever commands more than a fraction of that audience. Why?

Fundamental to the overwhelming popularity of mass entertainment is its relationship to fantasy. Probably on this account, 60% of a survey's respondents

named television as the innovation which during the previous 25 years had made life more 'enjoyable, pleasant, and interesting'."⁽¹⁰⁾ For most people fantasy is their most precious source of pleasure, a solace without which the often long, hard hours of tedium would be unbearable. Mass communication with other content may provide information which can be used (with effort and concentration) to suppress fantasies for a time. Entertainment, in contrast, coaxes fantasies into the open, honors them, feeds them, and gives them back to us refurbished. Therefore information, attitudes, or values traveling on the vehicle of entertainment bypass usual obstacles to the personality. There, depending on whether or not they help or hinder ability to master reality, they contribute to human safety or peril. The intrepid rescues, peaceful reconciliations, and humor depicted in some television shows, and imitated in life, should give us as much pause as the muggings, murders, and hijackings replicated from others.

THE THREAT FROM--AND TO--MASS ENTERTAINMENT: Notwithstanding its two-edged nature, mass entertainment in terms of social impact is perceived most often as a menace. Despite the paucity of hard data on adults, as each new generation of sexcapades or cinemurders ascends the screen, demands for censorship as society's defense against dangerous entertainment become more strident. Creators of entertainment fight it as an attack upon constitutional freedoms. Many of the rest of us also oppose censorship because through its substitution of tyranny for free exchange of thought, it is a malignant threat to society. At minimum, censorship infantilizes people by depriving them of responsibility. Psychoanalyst Aaron Stern, director of the Motion Picture Association of America's rating system, considers the threat so real that he implements the present system he himself disdains because presumably it staves off outright censorship. In his view, the proper function of a rating system would be "to inform but not restrict." He believes that the present rating system is itself a partial restriction and therefore "a constrictive, evil force." His recommendation is that we should "...invite the audience to make a choice. Let people decide whether they want to be exposed to it." He adds, "If you can come up with a better thing I can do to fight censorship, you have my word: I will leave this and do that."⁽¹⁴⁾

We offer here a plan which we believe is a "better thing" in that it would not only inform more effectively and stave off censorship, but also would foster maturity by broadening the individual's participation in shaping his own personality.

"TRUTH IN ENTERTAINMENT": We acknowledge in advance that implementation of such a program involves practical difficulties impossible to resolve here. Nevertheless, the urgency of the problem is a compelling reason for presenting a preliminary proposal that might work.

Had the providers of loans voluntarily adopted the principle of "truth in lending", it would not have become necessary for government to impose it by law. We suggest that the mass entertainment industry obviate the possibility of government censorship by voluntarily adopting the parallel principle of "truth in entertainment." This principle requires advance disclosure in the public media by its creators of the formative influences built into mass entertainment. These influences would of course include payments accepted for representing or excluding any element from the product, but would focus upon the assumptions, the attitudes and values, upon which it is founded. In addition, representatives of opposing viewpoints would be given equal opportunity to present their positions.*

What are the advantages of such a plan?

First, the public would have currently unavailable access to advance warning concerning crucial aspects of entertainment. Second, tremendous attention and interest would be drawn to entertainments as their social consequences were debated. In evaluating opinions of the creators and their refuters, many would be stimulated not only to select more discriminatingly the entertainments to which they wish to be exposed, but no doubt would be drawn into the debate with friends, co-workers, and via letters to the "Truth in Entertainment" (TIE) editor. Third, increased awareness of the importance of entertainment would help a wider spectrum of opinion and creative expression to find an audience, and would stimulate some to deliberately sample entertainments with points of view they might otherwise never have encountered.

We realize, of course that there can be no "truth" in this area comparable to the precision possible in "truth in lending" procedures.

or understood. The total effect could be that the public would seize hold of and use for their advancement the craving for entertainment which now leads so many to uncritical acceptance, enraged rejection, or just uninformed indifference to this vital influence in modern life.

Such discussions would revolve not about the plot or the artistic merit of a given entertainment, but rather around its theme, its message, its view of human nature, its differential punishment or reward of certain attitudes and values, its salutary or destructive social consequences.

Objections might be of two sorts--those based on feasibility and those stemming from doubts as to the desirability of such a procedure.

Such a scheme would be expensive. Several hundred mass entertainment films are released in the United States each year.⁽¹²⁾ If, for example, each film, TV series, or TV special were allotted one thousand words on the TIE page, to be divided equally between proponents and opponents, about one and a half newspaper column lengths and six minutes of broadcast time would be needed for each program under review. A requirement that each offering be discussed three times in the month prior to release and six times in the two months after release would necessitate a total of three newspaper pages and seventy-five minutes of broadcast time daily. However, the discussions could be divided among the available media. A major metropolitan area may have anywhere from ten to fifty radio and television stations; divided among them, the daily time allotment becomes much more tolerable. Newspaper space could be spread over the several print media that serve most areas. In the case of a continuing television series, the program could be evaluated at intervals, for instance three times a year. Other types of programs--sports, cartoons, daytime soap operas--could be given the same sort of periodic review. If a system were devised that would divide the expense between taxpayers, producers, exhibitors, and media, it should be moderate, and in view of the social benefits, an economical means of enriching national life.

Another feasibility objection derives from possible shortage of "qualified" commentators. However, it could be turned to advantage by enlisting non-specialist

members of the audience to discuss programs. One might eagerly anticipate comments from children regarding the values implicit in the behavior of Bullwinkle or Wile E. Coyote.

Objections as to desirability of the scheme are less subject to a dollars-and-cents analysis, but some will be equally challenging. The first might be that, despite good intentions in our search for "truth" in entertainment, we are likely to be offered statements characterized by varying but probably incomplete degrees of candor. Even should the creator give us uncensored his best conscious judgment of the values and attitudes implicit in his work, one must admit that often he is the least likely to know explicitly what they are. In 1947, thirty-two years after Birth of a Nation was made, D.W. Griffith said:

"I am not now and never have been 'anti-Negro' or 'anti' any other race. My attitude towards Negroes has always been one of affection and brotherly feeling....In filming 'The Birth of a Nation,' I gave to my best knowledge the proven facts, and presented the known truth, about the reconstruction period in the American South." (1)

Assuming that Griffith reported truthfully, the film nevertheless did promulgate unfavorable attitudes toward Negroes. (1) Had TIE been in operation when it was released the resultant more enlightening debate could somewhat have neutralized its effects, whether or not these were consciously intended. Moreover, after 60 years of such discussions we might not now be faced with the grim threat of censorship.

Sometimes the conflict between professed and underlying values comes remarkably close to the surface. Sam Peckinpah, whose reputation increasingly centers upon his celebration of violence, can claim to be sickened by the effect of his film, The Wild Bunch, in evoking combat eagerness from a regiment of Nigerian soldiers, and then not only enthusiastically praise Robert Ardrey's "great books", which "acknowledge the animal nature of man" (15,16) (meaning that humans are instinctually aggressive), but go on to produce still bloodier entertainments.

In evaluating the benefits of disclosure, however naive, muddled, or seemingly hypocritical, we must remember that even this sort of self-evaluation is better than no evaluation at all. For at least the public could learn the artist's own conception, or at least public pronouncement, of what he is doing. And there is always the counter-apologia to provide illumination. If a filmmaker maintains

that he offers no message and merely amuses, then that too is noteworthy.

Another likely objection is that entertainment critics already present the kind of evaluation we are suggesting. Reviews, however, generally do not address themselves to the basic attitudes and values of the work. Many critics take pride in restricting themselves to the question of how well a work achieves the goals chosen by its creators and not at all to judgment on the social benefit or toxicity of the goals themselves. Insofar as there may be said to be a critical ethos at all, it is to keep the critic's or anyone else's social values out of the judging processes. The fact that an occasional film does move critics to transcend their self-imposed limitations--the recent controversies over Straw Dogs and A Clockwork Orange are examples--only points up the usual procedure. And even in a climate of concern over movie and television violence, there are dozens of films such as Dirty Harry and The French Connection which escape such discussions. Ordinarily the only film which occasions a search for underlying attitudes and values is the offering from a noted foreign director. Thus, a critic will occasionally devote a column to Antonioni's anomie or Fellini's fantasies. Products of our own culture, however, do not often stimulate such reflections.

As an example, consider the following statements: "Everybody loves a good chase scene in a movie", and "Chases have always fascinated people..." One is from a review of a French film, The Burglar, in an "underground" newspaper,⁽¹⁷⁾ supposedly the kind of institution devoted to critically examining rather than just echoing establishment values. The other is from a Los Angeles Times article questioning whether highspeed police chases are worth the risk involved.⁽¹⁸⁾ Here the film critic and the newswriter unquestioningly elevate an established principle of film art into a general observation on human nature, ironically at the moment that this particular value was coming under attack by the establishment's Police Department. One function of our proposed review system would be to raise in advance of an entertainment's general release questions as to whether such filmic standards contribute to or detract from reasonable standards of human well-being.

Finally, despite the clamor for censorship there is the question of whether

the public might be indifferent to such an innovation. We think not. There is a rising tide of concern over the messages in our media. It often takes only the slightest direction of attention to the matter to engross the previously unaware person with the attitudes and values of a mass entertainment. An example is the 28-year-old pediatrician who, although initially exultant over the "suspense" in The French Connection's chase sequence, when mildly asked, "What is the film's message?", suddenly launched into an attack on cops (and movies glorifying them) who love chasing crooks more than protecting innocent bystanders.

Examples of concern about other forms of mass communication are also plentiful: An eleven-year-old girl testified before a U.S. Senate Subcommittee on her research on 3,000 children which indicates that TV commercials are deceptive and dangerous. (1) In another state fourteen fifth-graders engaged an attorney to represent them before the Federal Communications Commission in their demand that the license renewals of two TV stations be denied on the grounds that they broadcast deceptive and fraudulent commercials. (20) And there is the fact that public pressure forced a reluctant movie industry to adopt a rating system that even its director deplores.

What we are advocating is a mechanism that will allow us to put the mass media of entertainment into the service of survival without destroying freedom of expression. Indeed, by creating a procedure for open discussion of the attitudes and values represented in entertainment, we believe that public interest in it will be revived and sustained, to general public--and private--profit. The last wave two decades ago of intensive concern with "message" in the media resulted in outcries about "subversion" with associated injustices and peril to constitutional freedoms which stopped just short of censorship. We hope that adoption of our suggestion could result instead in a fruitful, just, and democratic process of public concern with social effects of entertainment.

SUMMING UP: As an alternative to widely advocated censorship, we should consider instituting voluntarily a system of full advance disclosure of the assumptions, attitudes, and values built into mass entertainment. Some will object as

vociferously to deliberate use of entertainment to promote human survival as they do to its present-day devious exploitation to sell products. They may be equally put off by our suggestion. We ask readers to remember that an ominous alternative to our proposal is the tip-toe tyranny represented by various permutations of "Skinnerian" behavior control. From subliminal advertising to comprehensive design by experts of "the contingencies of reinforcement" encountered by a human being from birth on--the ultimate in censorship--all take away from the individual adult the exercise of mature responsibility for the directions in which he allows himself further to be shaped. In contrast, the deliberate and overt deployment of mass entertainment, fully disclosed in advance, returns to him the discretionary choice over which powerful influences he prefers to subject himself. Under such circumstances, entertainment becomes an unexplored resource for deliberate expansion of human freedom and dignity.

Skinner denies the existence of real freedom and considers "persuasion" and other cognitive measures to change minds as merely "ineffective" means of behavior control.⁽²¹⁾ If contempt for the possibility of conscious human decision to change oneself is the alternative, the conscious and fully disclosed deployment of mass media of entertainment becomes even more attractive.

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ACTUAL AND POTENTIAL TENSIONS IN LEISURE AS A SOURCE OF MEANINGS

By Max Kaplan
Director,
Leisure Studies Program

There can be little doubt that new relationships of work to non-work are characteristic of our time. Leisure is that portion of human experience which, within the context of free time, is a potential source of values. As I refer to it in a forthcoming volume (1), leisure consists of relatively self-determined activity-experience that falls into one's economically free-time roles, that is seen as leisure by participants, that is psychologically pleasant in anticipation and recollection, that potentially covers the whole range of commitment and intensity, that contains characteristic norms and restraints, and that provides opportunities for recreation, personal growth and service to others.

In all industrializing nations, similar roots to the new leisure are found in urbanization, in aspirations for goods, in the growth of a middle class, in an acceptance of and at times even a victimization by the mass media, in a desire to work less but not to forego the psychological structure of being needed in productive ways; there is, further, a new theology, a worldly purgatorium, in which we have neither Paradiso nor Inferno, but elements of both. It is the same issue everywhere, whether stated by a Henry Thoreau, a Jacques Ellul or an Eric Fromm: does the creation of miraculous tools, such as television, imply that inevitably Man becomes their tool? Can Man maintain the best of humanistic visions and attitudes without surrendering the indubitable validity of comfort, of things, of ever new marvels in transportation and communication?

Those who would emphasize the difficulties of forecasting the direction of human values in this new plethora of material abundance are asked to consider that we are unsure even of our historical readings. In my country, for instance, at the beginning of the century we worked six days a week for ten hours a day; now that the organized worker is down to forty hours, does anyone have the tools to measure the quality of "happiness" in this gain of twenty hours each week? Alas, the computer needs to be fed before it can digest; how does one feed it the precise ingredients of happiness?

As to general descriptive data, there is now a considerable literature about the field, especially from the decade of the 1960's. Since the study has largely been preempted by sociologists, we have a rich collection of correlations of activity with such variables as age, income, or educational background. A current team of seven nations, under Jeffrey Dumazedier is presently examining indicators of the post-industrial society. Recently the Mouton Press has published the important 12-nation comparative study of time budgets organized by Alexander Szalai.² Conferences such as the Brussels meeting held last April by the Van Cle Foundation on "leisure in the industrial society" are bringing us closer to the direct interests of futurology. I would call your attention, for example, to a study issued in 1972 by the Institute for the Future in the USA called Some Prognostics for Social Change by 1985 and their Impact on Time/Money Budgets. This Delphi study made clear in the projections of its 27 participating experts that,

In the aggregate, there is evidence of several related shifts in personal time expenditure. It is anticipated that the working male will spend less time at work-related activities and more time at activities related to house, home, or leisure.. Among these events

that the panelists thought were more likely than not...the average (fulltime) workweek will decline to 32 hours or less.. the average time allotted to fulltime employees for vacation will at least double; most married women will be in the labor force³..

Thus the empirical evidences of leisure are accumulating. In the broadest sweep, the new situation in more advanced industrial societies such as the USA may be summarized as follows:

1. Leisure is on the verge of becoming a dominant value, and one measure of the post-industrial society.
2. Leisure as a value springs from the emergence of new technological conditions, the weakening of religious supports and the democratization of economically free time.
3. The chief technological change leading to leisure as a dominant value among the masses has been the assembly line, followed by progressive automation, with a dual impact: a) it reduced the relative economic output of muscle in relation to machines, b) the machine substitute tended toward an increasing impersonalization of time.
4. The industrial revolution, especially in its advanced stages, removes the worker from the whole product, just as the size of the large companies removes him further psychologically from an interest in the company.
5. The simultaneous industrial and marketing forces create an expertise in planning and selling a product and in programing the consumer. This expertise is converted to creating leisure goods and

services to take up the slack time which it had created by producing and selling assembly-line goods. Thus the creation of time itself as a value is given substance by the selling of things that require time to use. An the value of work is balanced by the value of leisure, both now promoted by comparable marketing techniques.

To what extent and in what degree does this outline apply only to advanced technological societies, and what are its variations among different social, economic, or occupational segments even within one society? These are pertinent questions; they have direct relevance to the meanings which leisure and work hold for persons, and fall within a large complex of factors. The model which I have developed for this total study was reproduced, together with 60 analytic propositions, in a recent issue of Leisure and Society, published in Prague⁴; there is no need here to summarize it. I rely there on a sociological dialectic to provide a dynamic analysis which is interdisciplinary, qualitative as well as quantitative in research possibilities, and which views leisure as a process rather than as a mere activity. Below I shall spell out five dialectic sets which create possibilities of "tension for and against symbiosis." The tensions are identified in each case, as well as prospects for personal meanings and implications for futurologists. A tentativeness and requisite brevity will be self-evident in this exposition.

II

I. Tensions between the values of work and non-work.

A semi-theological contrast has been often drawn between the Christian or Puritan work ethic and the ethic of hedonism, the "fun morality:" discipline

as opposed to relaxation. Work, it is said, implies order, responsibility, even a symbol of divinity. Guilt is often associated with leisure, play, amusement. Pieper attempted to dismiss these Protestant-oriented divisions, to argue that leisure can be the "basis of civilization."⁵ In the transition from a known work ethic to an unknown leisure ethic the pioneers of technology - the present generations - are uncertain and hesitant.

A. Leisure meanings in this state of tension depend on the strength of convictions that the person or the culture hold on the holiness of work. The American labor movement, at least, pays lip-service to this theology while continuing to negotiate for shorter work weeks. Leisure has in the past had to be "earned", as "re-creation" its purpose was to refresh oneself for more work. The transition to the autonomy of leisure can be difficult, even with the knowledge that machines are doing more of the tasks that need doing.

B. Futurologists have found that the purely empirical approach cannot grapple with changing values, and hence can hardly even conceptualize social change. Hassan Ozbekhan has called attention to this difficulty. The Sociology of Sociology⁶, by Robert Friedrich can be read with profit by all futurologists, encouraging them to move easily and with confidence from the social sciences to confident doses of intuition. Peter Drucker pricks the bubble of sure-footed predictions about technology⁷; far more complex is the task of "previsions" about changing values. Rescher and Beier's collection of essays on Values and the Future hardly reassure one in this regard⁸. Generally, there seems to be a trend toward aspirations for "happiness," as Georges Friedmann notes, and this seems to imply a modification of traditional attitudes toward work in the economic sense and an edging toward "works" (as in voluntary services) in the Biblical sense.

II. Tensions between leisure consumption and creativity

The extensive interest in leisure by business and industry rests on the growing consumer market. In the USA the official estimate is that slightly over 6% of all consuming expenditures is for such recreational items as ticket purchases, mass media equipment, reading, or outdoor activity; yet if transportation for "pleasure" is added, this proportion jumps to almost 15%. From the humanistic view, the time freed by technology could be useful for developing deeper values; its partisans note the access which the masses now have to creative possibilities that were once reserved for the minority. Mass culture critics, following the lead of De Tocqueville and Ellul, argue that leisure, as all else, is contaminated by the quantitative and material values of "the technological society." On the personal level there is time for both types of access, i.e., to creative opportunity or to unabashed consumption.

A. Leisure Meanings from this perspective vary among segments of population and are affected by numerous other factors. One of the themes of youth now is a symbolic protest against the aimless accumulation of things and the work compulsion among middle-class, suburban parents. The bulk of society, undoubtedly, feels no tension at all, but goes on consuming; it is assisted in this direction by a vast advertising apparatus of which, in the USA, comes to many billions per year. Yet, in the same country, if the observer is not overwhelmed by naive expectations, he can note a steady growth in such areas as adult education, attendance at symphony concerts, wholesome outdoor activity, numbers of amateur painters, and the like.

B. Futurologists will do well to go beyond the familiar categories that have been constructed by sociologists in reference to social class;

increasingly, the mass media have played havoc with the identification of class through occupation or income, increasingly, lifestyles can be chosen through behavioral gestures rather than ascribed by marriage or birth. Vacation patterns, the purchase of boats, the pursuit of certain symbolic games serve as examples. The crucial issue of the future will be the cultural attitude that evolves about creativity as a respectable goal for more than the relatively few, as in the return to handicrafts.

III. Tensions between going to the world and bringing the world to us

These emerge as two principal strands in all technological societies: communications that can provide, in McLuhan's words, a "world-village," and transportation that makes map-readers of all. Television has produced the need for a new "mental ecology," or the relationship of spaces as actuality and as imagery. Space must be added to time as a basic dimension of leisure; the urge toward restlessness - always in tension with the need of both psychological and physical rest - can now be implemented. Indeed, increasingly, as more societies approach the post-industrial condition, television and travel are not paradoxical but jointly possible by technics and by bulk time.

A. Leisure meanings in both instances emphasize the feeling of freedom for the common man - a freedom made possible by technology. Tourists, whatever their motivations and patterns, add a new type of traveller to traditional types of the past - the missionary, the military, and the merchant. The point has been made more than a decade ago that tourists are either "empathic natives," who seek to understand peoples whom they visit, as in learning the language; or "comparative strangers," who move about in person but remain at home in their attitudes and values.⁹

B. Futurologists will find here a rich dimension for study, especially in the fusions and interrelationships between going to the world and bringing it into one's living room via images. Witness the TV-cassette systems which permit one to use images on the time schedule he prefers rather than according to a newspaper schedule¹⁰; or the growth of mass photography, which enables one to bring his travels back for subsequent re-consumption. As to tourism itself, a major concern for futurology will be on a semi-political level, i.e., the impact of having tourists come into cultural areas that have been relatively closed, thus raising the new issue of the meaning upon a population of the leisure of outsiders!

IV. Tensions between home-neighborhood, community-region, and nation-world.

These are additional examples of traditions and lifestyles in relation to geographical, ecological, and symbiotic aspects. A new phenomena in some parts of the world is the "megalepolis," which in its totality embraces the physical and cultural characteristics of many smaller entities. An example is the 30-million population studied by Jean Friedmann along our east coast.¹¹ Leisure patterns, with increased mobility and outdoor use, serve as the bridging phenomenon from inner to outer, or from the lesser to the greater set of alternatives. In the USA during the 1960's, the most important census finding was the move to suburban areas, thus indicating an attempt on the part of many to provide a daily psychological and physical bridge from the smaller to the larger circle, and capitalize on the advantages of both urban and rural values.

A. Leisure meanings in this perspective fluctuate from the homogeneous to the heterogeneous, from familiarity to adventure, from the relatively known to the unknown. Utilization of space outside of one's limited community requires a different type of time structure, simply described

as "bulk" in distinction to "fragmentary." Since travel in extended time periods was traditionally the province of the wealthy - except for those who were conquering, selling, or preaching - the new tourism has perhaps removed the strongest symbol of wealth; leisure in this spatial sense has become a dynamic counter-revolutionary force on the one hand (outdating Veblen's concept of conspicuous leisure) and a revolutionary tool on the other (through pleasure and adventure instead of violence).

B. Futurologists will probably find that their productions in both domestic and international travel will be affected by less measurable values of tomorrow and more measurable forecasts of land and air travel. The tendency seems strongly in the direction of more travel. A circle sets in: more desire to move produces more facilities and apparatus of organization, producing in turn more desire. An example is found in the increase of automobile traffic which follows more highways. For the cultural critic and humanist, an increasing issue is the potential diminution of pluralistic values as regions of the hinterland are invaded by outsiders. One of the chief values of tourism is the discovery and emotional response to strange sights and traditions; suddenly, the perpetuation of these "oddities" in the eyes of others becomes a financial concern to national and regional tourist bureaus, as well as a nationistic rally among the residents. New balances will probably emerge between keeping one's relatively "primitive" area as it was, while also accommodating it to the needs of transients.

V. Tensions between leisure as revolution vs. counterrevolution, or as confirmation vs. innovation.

A contemporary view of leisure goes far beyond the Pleasure Principle

of Freud or even the emphasis on relaxation found in Dumazedier.¹² The functions of leisure, as in the range from beach games to Beethoven, extend from complete fragmentation and superficiality to intensity and depth. There is a place for the trivial in life, as in the reading of comic books; every such act is a corroboration of the present, and characterizes the greatest portion of free-time use. Revolutionary leisure is that which potentially transforms the world or one's small part of it, as in a political act or in writing a new poem.

A. Leisure meanings are not inherent in the act, but in attitudes or values brought to it. A priori judgments or observations by moralists or so-called scientists do not serve the purpose of realistic analysis. In a time of change - certainly, one characteristic of tomorrow's cultures - leisure, no matter how trivial, provides continuity; that is why a repetitive game of cards can be significant and an unfamiliar experience in the arts can be destructive, thus denying the validity of leisure hierarchies established by well-meaning outsiders. Familiarity or security are useful purposes in leisure. On the other hand, especially in the case of the elderly who are retired, there are dimensions of innovation and adventure that have been overlooked only because of stereotypes that originally were foisted upon everyone by educators of children; as social gerontology develops enough confidence to find its paths of inquiry separate from geriatrics, the emphasis turns to inventories of accumulated experience as the base for personal growth.¹³ This provides the new outline for cultural innovations through leisure. The quality of such innovations is illustrated in a Charles Ives of my country or the Russian composers who arose from the tradition-free ranks of skilled amateurs.

B. Futurologists must develop models that, unlike the Utopians, are not static; it is difficult enough to project changes for the post-industrial society, it is puzzling how to inject the nature of change itself as a value. Leisure has the double possibility of creating and preventing change; this explains, in part, the active interest in this subject among Socialist countries. It thus becomes not only an indicator of social and cultural development, but an instrument as well. To the degree that futurology is more than a set of observations and becomes a bridge to national policy, the clues provided by leisure are thus subtle, but increasingly useful.

There are other tensions in leisure that follow from the dialectical approach of functions: leisure as reality and as symbol, as an expression of tradition or regulation, as terminal or educational experience, as confrontation versus withdrawal, as freedom versus constraint, and so on. When, as in the present conference, there arises an inevitable tension between the involvement of the speaker and the boredom by the listener, the tension here, at least, is easily resolved: end the paper. Many questions are left hanging in air, such as a more precise dynamic explanation as to how these tensions are actually experienced by the person, and how various elements in the society influence a leaning toward one or another end of the polarity. But is it not symbolic of futurology itself that it properly ends in questions that are boldly drawn rather than in projections that must necessarily be humbly submitted?

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SELF-ACTUALIZATION BY INTEGRATING PARADOXES IN HUMAN SITUATION

By Erika Landau

Psychotherapist, lecturer in art his

One of the acutest existential problems is that of integrating the conflicting aspirations within the individual. This struggle for integrating the internal contradictions and paradoxes arises from the clash between the outside world and the individuals' inner world.

In our forum, where changes of the outside world are the subject of so much contemplation, the problems of individual integration of these outer changes should be of equal importance. The importance lies in the perpetual struggle of the individual to balance the outer changes with inner needs, factors which largely determine the psychic balance of the individual.

The need for self-actualization, which is one of the most basic human needs, is hardly achieved because it can be blocked by inner conflicts. These conflicts appear when the individual is not prepared for new situations, when a lack of orientation shuts him in front of change. It is a question of education toward conflicting situations, when to one problem there are several answers, and any chosen way might create conflicts about giving up other ways, with apparently equal chances of achievement or failure.

The individual is in constant contact with his outer and inner world. The open-mindedness with which he experiences the world around him enables him to recognise problems and to be sensitive to them. His relationship with his own inner world stimulates associations with what he knows and has experienced similar (but not equal) to the new problem; this enables him to arrive at solutions. To reach these solutions we need inner freedom in order to make associations possible, to reach new insights; to dare to confront new unknown changes with the old known experience.

This is a perpetual struggle which needs to be prepared for, which needs education and exercise. Self-actualization is only possible when there is a readiness for conflicting situations. A fully-functioning individual is therefore one who withstands and tolerates the pressure of the emotions accompanying the integration of conflicting, paradoxical situations, such as: on the one hand to be involved and on the other to maintain a certain distance; freedom of creation and discipline of execution; integration and dispersal, the will to remain within the bounds of the known, to draw confidence therefrom, and the drive to explore the new and unknown; the capacity to deal with one single detail and to see the whole.

Below some few examples of inner conflicts towards outer situations:

Belonging versus Individuality:

There is a tendency in the individual to preserve the narrow limits, the closed circle, in which everything is familiar, everything is safe, in which to every stimulation there is an appropriate, familiar reaction, but in which boredom and routine prevail. On the other hand there is the attraction to the wider world, which is new and colourful, but which is largely unknown, unfamiliar, in which one feels anxiety and insecurity, because one has to choose from among various possibilities.

In the hothouse of the closed circle one has the feeling of belonging to a world with strict rules, the main aspiration being obedience, conformity and dependence on authority. In the wider world in which the individual chooses his alternatives, where he can be himself, one needs flexibility and a spirit of adventure in order to overcome those moments of loneliness which all growth and development or new ideas bring with them. Any education which aspires to adaptation and conformity within a strict circle denies the uniqueness of the individual,

Detail versus Whole:

The individual tends to get lost in the detail. This is the cause of the problem of the closed circle, in which the individual goes round and round, cut off from the group, from the whole. As a result

of this disconnection he loses his sense of proportion in relation to outer situations and to the personality as a whole.

Growth means developing the ability to see things as a whole; the moving away from detail, the situation in which the individual is so involved, and to integrate him with the whole, within the entirety of the situation, of the personality, of the universe.

This corresponds to another paradox, which is referred to as "passion for/and distance from the object" or "objective surrender". Passion is the willingness and the ability to express life impulses in and through work on the object. The object can be a scientific idea, a work of art or any situation in life. Love for the object and the trouble taken with the object increase with the shaping and the time. But the distance from the object also increases with the trouble invested in it. This distance, which restrains the impulse, enables the subject to occupy himself with the detailed aspects of the object. Thus, impulse and restraint interact in any creative process, in any problem-solving situation, they are equally important, equally essential.

Surrender is the fusion of the ego -- the motivation and projection of the individual with the object. If we get involved in a problem at the first stage we entirely surrender to it. Yet the solution comes up only when the fusion with the object (projection and distension) are reduced to a minimum. In the course of problem-solving comes the moment when we have to step back and throw the "objective look" at what the fusion produced. It is the moment when the painter steps back from his canvas, the scientist takes a second look at his experiment. Thus we create the distance between ourselves and our objects, integrate the detail into the whole.

Wish for/ versus Fear of Knowledge:

One of the absurdities of human existence derives from the confrontation of the individual who seeks law and order in every situation, who aspires to understand every situation -- with the wider world which is devoid of law (or whose laws are not understood), where there is a lack of orientation -- a world in which one has to seek

out and choose confrontation. When faced with the absurd, the individual tends to react by retreating into a narrow circle, in which he feels secure and remains passive. Knowledge on the other hand, is of active nature, knowledge means action. This action brings disorder into the former order. One needs strength to withstand the anxiety of disorder until the new order is formed. Knowledge is conditioned by question-asking. The question which opens the problem, widens the horizon of knowledge, and leads to solution. It stimulates the discovery of new questions and penetrates into deeper problems. All this seems like diffusion and disorder to the basic order-seeking, security-seeking individual.

If education encourages daring to go out and encounter the new and the changed, to acquire knowledge, to understand the irrational in the wider world, the individual takes the first decisive step toward maturity.

Rigid Habit versus Flexibility:

Habit is the compromise of the individual with his environment or with his aspirations. Habit is the lighthouse which guides our existence, but it is also the chain that ties us to a limited sphere. Habit means constant adjustment to the demands of the environment without including the individual's potentials. To become a creature of habit leads us to the feeling of security but also to boredom. Boredom is interfering with real experience. The individual is liable to seize on any release from boredom without examining its nature. Any temporary, consumatory action would do and not the growing experience, the creative process. Liberation from habit and boredom and the creation of new ways of behavior require flexibility, the ability to see things from a new perspective, and daring because the new experience harbors the danger of insecurity, suffering and failure.

Flexibility is a pendulum which swings between the familiar habit and the unknown. The aim of education is to make clear that we have to get used to the swing of the pendulum and not to the rigid habit.

Determinism versus Freedom:

The majority of individuals are determined and limited by the belief in the inexplorability of fate. This belief is expressed in terms of perpetuity. Behind this determinism is a narrow and closed world. Yet there is this desire to get out into wider spheres, where no one is condemned by pre-ordained fate, where there is some freedom, where one can choose among alternatives.

The emphasis in this changed, wider world is on creativity, trust, love and other qualitative experiences. The ethic is that each man is responsible for the effects of his own actions, of his own well-being. The sense is that the individual can become a more active force in shaping his life, a kind of self-transcendence that originates in his inner world and expands outward into a spiral.

If those existential paradoxes will be explained and understood there will come the change in the individual from the concept of will to pleasure to the concept of will to change, the will to understand meanings, the will to actualize the inherent potentials. There will be the change from the notion that man is made by society to the notion that society is made by men, with all the personal responsibility and endeavour that the task entails.

THE RELATIONSHIP OF HUMAN DETERMINANTS TO HUMAN NEEDS

By Stanley Lesse
Psychiatrist, editor-in-chief,
American Journal of Psychotherapy

Human needs cannot be considered in splendid isolation divorced from an understanding of new societies and technologic development. Each in itself is but a fragmented fantasy, a conceptual scotoma. Formulation stressing the indivisible interrelationships and interinfluential aspects of these various factors is necessary as a basic preamble to meaningful futurologic theorizing and methodology development and for worthwhile forecasting. This viewpoint, therefore, holds that one cannot study human needs or new societies or significant supportive technologies unless they are considered as a single, interrelated, organismic whole.

Definition of human needs

A pragmatic definition of human needs would be: "Human needs are those factors which permit and aid an individual to function either alone or in a group, in a given milieu, with optimum ability to adapt to or to modify the human-environmental equilibrium, in order to guarantee survival with pride and pleasure."

Human determinants and human needs

Human needs are not primarily phenomena but are secondary and dependent upon more elementary factors, namely, "human determinants." Indeed, to comprehend human needs, one must first comprehend the concept of human determinants.

In the absence of a thorough study of human determinants any discussion of human needs, whether on an individual or group basis, becomes a confused expression of personal bias and emotionalism too often reflecting the limited expertise of the observer. Also, when considering human needs one must consider man as an individual and as a member of a group or society. These two states are expressions of a changing equilibrium within every person resulting in a fluctuating balance between forces reflecting the individual ego and forces reflecting the group ego.

Human needs change depending upon the quality and intensity of the determinants present. It also might be worthwhile to postulate that what may be considered as human needs at one period in time may not be considered needs, but rather liabilities or detrements at another period in time dependent, once again, upon changes in determinant factors.

In this paper the author, will present a broad outline of human determinants from which human needs logically appear to evolve. These determining factors may be listed under several headings, namely:

- I individual human determinants
- II societal (group) determinants
- III environmental determinants

I. Individual human determinants

Individual human determinants may be divided into two subtypes: a. genetic and b. ontogenic.

A. Genetic

Individual genetic determinants are likely to remain fairly constant for the foreseeable future. In all probability there will be no basic change during the next few generations. However, there could be dynamic exceptions to this observation, if a thermonuclear holocaust should occur or if large areas of the world's population were exposed to inordinate levels of radioactive pollution. It is not unlikely that significant attempts at genetic manipulation will be attempted during the coming generation and with an ever increasing frequency during the early portion of the twenty-first century.

A number of important biologic and psychologic factors are in great measure genetically determined.

1. Age or duration of life

This appears to be genetically determined for all species of animals. While more people are living longer, the extremes of life expectancy have remained rather consistent throughout the millenia. This genetically determined biologic phenomenon may be altered during the coming generation by a. the replacement of organ systems with mechanical devices and b. by biochemical supplementations for inadequate enzyme systems or the counteraction of excessive enzymatic or other biochemical mechanisms.

2. Size

All animal species have limitations with regard to size. In general,

with increased utilization of high protein diets, humans tend to grow bigger. However, the limits of human development are pretty much now as they have been throughout the millenia.

3. Sex

Sexual determinants, in addition to ascribing a specific reproductive role, reflect themselves, to some degree, in the size of the individual and capacities of physical strength. It is highly likely that with technologic development and changes in societal demands, the difference in size and strength will have little pragmatic meaning in the not too distant future.

4. Intellectual capacity

In all probability there are variations in intellectual capacities that have genetic determinants, even though the differences in intellect in most people are environmentally determined. However, the capacities for the accumulation or storage of knowledge, in an encyclopedic manner, is genetically determined. In other words, there is a limitation to how much information the human brain can encompass. With the use of computing devices and a deaccentuation of the encyclopedic method of learning this determinant will very likely be modified and the formal accumulation of data will be less emphasized and rewarded.

5. Emotional capacity

Little is known about the inheritance of "normal" emotional capacities. Hereditary propensity for certain psychologic ailments such as schizophrenia and manic-depressive psychoses have been documented. The inheritance of what we would consider normal emotional trends and capacities is still in a research phase.

6. Race

Aside from skin color, the inheritance of positive attributes intellectually and emotionally does not appear to be the province of any single racial group. Due to close intermarriage throughout societal history, certain adverse hereditary predispositions or patterns have become more prevalent in different racial or environmental groups. For example, Cooley's Anemia among mediterranean peoples, sickle cell anemia in Negroes, diabetes mellitus among Jews, adenolymphomas among Chinese, etc.

B. Ontogenic

Specific changes and limitations may be associated with different age groups during the process of ontogenic development in the human. One may reason that to some degree this also has genetic influences. While this may be true, there are important descriptions of human determinants during the various stages of development, a few of which will be outlined.

1. Infancy

The period of infantile dependency is extremely long in the human animal. Indeed, the human infant is utterly helpless and completely dependent upon parents or parental surrogates. It is well known that early psychic traumas in the form of excesses or deficiencies determine future psychic needs to a great degree.

Due to the very slow development of the nervous system in the human infant, the capacity for mobility and intellectual development are very slow in comparison with most other mammals. As the infant

approaches childhood the learning capacities increase dramatically, with the infant accepting most new information and rejecting relatively little.

The entire pattern of infantile dependency together with the dependency that is noted in childhood and to a lesser degree in adolescence, determines in great measure both individual and societal needs in the adult human.

2. Childhood

Of all animals, the childhood period in humans is of extremely long duration. During this phase of development dependency needs are profound physically, psychologically and emotionally. The human animal develops very slowly in size. Sexual maturity is delayed for eleven or more years. The individual and group dependency needs remain very prominent. Severe psychic trauma is possible if the child's parents or parental surrogates are either inadequate or excessive in their behavior patterns.

The human child has very fertile learning capacities and rejects relatively little information in comparison with the amount that is retained. It is during this phase that the human first develops the capacities for meaningful self-image. It is also during childhood that the capacities for social conscience and social identity are first formed. During the childhood period there are severe limitations due to capacities to assume significant responsibilities either on an individual or group basis.

From that which has been said about these particular determinants, it is not too difficult to evolve and delineate the types of human needs that will be resultant from these determinants either during infancy or childhood.

3. Adolescence

This too in the human is unusually long. In total, approximately one third of the human's existence is spent in abject dependency upon parents or parental surrogate. The more complicated the society the longer the dependency period. In a highly organized, technologically oriented society socioeconomic dependency is a prominent phenomenon.

This phase of human development is characterized most dramatically by biological sexual maturation with the capacity for reproduction and propagation of the species. During this phase also the human capacities for the encyclopedic accumulation of data remains extremely facile. There is a marked increase in the capacity for individual and social responsibility.

This extremely long period of development from infancy through adolescence and even into early adult life has determined, in great measure, the types of socioeconomic and sociopolitical institutions that have been developed. These, indeed, are reflections of individual needs expressed in a group fashion.

During the past two and a half centuries the western world has been dominated by the bourgeois ethic which has stressed man's individualization. However, for most of man's historic existence his group ego has been dominant over his individual ego.

The long period of dependency as described above through which the human animal passes ill prepares us to be individualists, but rather prepares us to be group dependent animals.

This may be documented by historic observations. In only two periods in western history has man lived in societies in which the individual has been in his ascendancy. This first period was in pre-Periclean Greece when the plebeian in the city-state would as an individual take an active role in his own economic determination by active participation in the agora meetings which were a type of universal legislature.

Prior to that brief period and then for 20 centuries man, in general, was primarily a group dependent animal living under the protection of tribal chiefs, feudal lords, dictators and divine right kings. During this period man functioned primarily as a group dependent animal with his group dependency being a direct outgrowth of the long dependency period.

The second period during which the individual man achieved his ascendancy has been during the past two and a half centuries. Without meaning to express any opinion, it is quite obvious that man in the western world is legislating away his individuality and accepting instead group security in the form of social legislation bringing with it guarantees of economic security.

It would appear the very long dependency period that characterizes human development determines in great measure the type of economic and political structures that are likely to be optimum for homo sapiens

4. Adulthood

The period of adult life has gradually expanded with the conquest of infectious diseases and the availability of improved nutrition. In general, the majority of individuals in the technologically developed countries have an adult span that is approximately twice as long as the period of development.

From an intellectual standpoint one sees a greater tendency to reject information in comparison with the tendency to absorb new information. This is a reverse of that which was noted during infancy, childhood and adolescence. Despite this fact, in most countries expertise and status depends upon encyclopedic accumulation of data.

The major thrust of the determinants vary as adult life advances. For example, during one's twenties and thirties one's needs may focus upon preoccupations with child bearing and the raising of small children. These needs will vary from the needs concomitant with factors more appropriate to those determinants expressing themselves when one is forty, fifty or sixty.

The determinants associated with physical retrogression whether they pertain to menopause or an overall relative limitation to physical endurance, produce needs that may be at variance with those experienced one or two decades earlier. The capacities to absorb new information is reduced, not primarily due to organic factors, but rather because it may threaten one's status which is dependent upon expertise based on older data and methodologies.

The relationship of the needs of the adult, therefore, can very readily be conceptualized by an understanding of the determinants.

5. Old age

At the very onset one must recognize that age cannot be viewed logically purely on a chronologic basis. If age is measured in terms of intellectual adaptability, applied wisdom, cultural curiosity and emotional adaptability, then one is able to observe that there are many persons in their sixties and seventies who are youthful in comparison with many individuals who are in their twenties or thirties. In all likelihood with the removal of the encyclopedic method of learning as the prime means of gaining instruction (i.e. by the universal availability of memory banks), the decreased capacity for data storage that is associated with increased chronologic development will be diluted.

Old age is characterized by decreased physical energy and a change in many body functions. I have already noted the decrease in capacity for the encyclopedic storage of new facts. In general there is an increased group dependency and a tendency towards emotional rigidity. These phenomena are not necessarily so but are generalizations commonly observed.

These individual human determinants, I would like to emphasize, cannot be viewed in splendid isolation but rather must be seen in interrelationship with societal and environmental determinants.

G. Human rhythms

The concept of human rhythms is deserving of attention. All animals and all structures have their own particular rhythms. If these are exceeded beyond a certain threshold, the animal's physical or psychic mechanism may be placed under intolerable stress. With regard to humans, this has been dramatically demonstrated as part of space exploration. If man's biologic rhythms are disturbed too radically, fatalities may result.

II . Societal determinants (group human determinants)

A. Demographic

As I have outlined the long dependency period characteristic of human development determines in great measure man's group dependency needs. Man's needs also are determined in great measure by the concentration of population. One's needs in an isolated rural area are different from those in a small urban region and this in turn is different from those in a large urban area. Finally with the development of the megalopolis these needs will be altered still further.

The concentration of population in a given unit area greatly influences the individual. With the complexity and tightness of organization, the number of interrelationships between individuals increases not arithmetically but, as the French mathematician Graicunas has shown, geometrically. Thus, when two people occupy a

limited space, there are only two relationships possible. With six people, that number has increased to 100. To cope with a progressively increasing situation, new regulatory devices must be instituted. This will be extremely dramatic when we live in huge megalopolises. Of necessity this will demand that expansion take place vertically rather than horizontally. It will necessitate that each individual have a limitation to the amount of space that he alone or as part of a given group might occupy.

This concentration of population determines in great measure how the type of individual and group dependency needs are to be satisfied. In addition, to a degree, the concentration of population determines the type of technologic innovations required to guarantee sufficient communication, transportation, housing, food and material supplies and lastly the type of leisure that will be possible or optimum.

The concentration of population in a given area determines also the type of institution that will function with optimum efficiency.

Finally, the degree of population concentration determines in great measure the type and degree of individual expression that can be tolerated for the common good. In highly concentrated areas a greater need for intrapsychic expression of individualism is necessary.

1. Institutional structures

a. The family

The family structure began in response to the need for mutual protection, especially for the protection of the helpless human infant

child, and to a lesser degree the adolescent. In this regard the institutional determinants may be seen as being secondary to the more primary determinants that were relevant for the individual human determinants that have been described in some detail.

The family model in great measure determines the character of social behavior and group needs seen in a given society, since it forms the prime source of learning, pragmatic adaptation and conscience. The family, indeed, acts as the model for the larger communities whether they are local, regional or national in scope.

The family was in its ascendancy and had its greatest purpose when the man depended upon hunting or upon agriculture as the main sources of sustenance. The family ideally satisfied the individual's dependency needs particularly on an individual basis.

The family structure has survived because in addition to its capacity to satisfy individual and group needs during the agricultural and industrial revolutions, it has the capacity for marked flexibility. It varies in character depending upon the relative number of males and females, the number of children, the environmental surroundings. The question arises as to whether the family will have an equally important role in a crowded, more cyberneticized world.

Some pediatricians have expressed the opinion that the direct relationship of the infant child to a maternal figure is necessary for satisfactory development. These are areas for research in terms of the possible dilution of the family as the prime social unit in our future society.

b. Local communities

The organic unit that is the local community is in reality an extension of the family structure. It too satisfies the group dependency needs of the individual and in the case of the family was a necessary group formation primarily in the early hunting and agricultural societies. With the mass increase in population, concentrated in small areas, the original purposes of the local community have been altered and have taken on a different meaning. As a community becomes heavily populated, an individual's identification with that community is diluted thereby decreasing the capacity for the community to satisfy the group dependency needs.

Population concentration causes different needs in itself as I have mentioned above with regard to space and mobility. It also alters man's needs in terms of communication and transportation, thereby demonstrating the indivisible interrelationships between the group determinants and technologic determinants.

As I related before the total number of people in the community determines the amount of interpersonal relationship and the type of interrelationship that may occur. In part the reliance upon vertical mobility in contrast to horizontal mobility also determines the type of interrelationships that are possible.

To a degree, the more heavily populated a given community, the greater the need for suppressing the individual ego and the greater the need to satisfy the demands of the group ego. In other words, the greater the population concentration the greater the need for

intrapersonal expressions of individualism versus the interpersonal expression of individualism that was readily possible when the population concentration was very low. In the main, community rivalries may be seen in some measure as extensions of sibling rivalries.

c. National group levels

This too remains an extension of the family. The international rivalries may also be seen as the grand extensions of sibling rivalries. In a nationalistic scheme the leaders are parental surrogates. This identification with national leaders satisfied the identification needs, although it is in the main just pseudo-identification. This type of identification is different from that that is found in the family or local community which is on a more personalized basis.

d. International

The international community does not have the same role nor does it have the same determinants in the mind of the individual, since the individual does not identify with a world figure as a father surrogate, and the individual cannot identify with a group or collective of leaders. It is theoretically possible that if our planet were in a rival situation with another planet, that a world leader could in this instance become a parental surrogate.

Other institutions namely the law, medicine, economic institutions, etc. are ancillary structures which compensate for or satisfy needs resulting from these individual and group determinants.

III. Environmental determinants

A. Climatic

The climate determines many factors. On an individual basis, it determines, to a degree, the amount of energy output possible by an individual and the amount of caloric intake that is necessary to sustain this individual. It determines, in some measure, the demographic capacities of a group. This in turn is dependent upon the availability of those biologic and physical resources necessary to satisfy basic needs. Climate in part, determines transportation and communication capacities. It also determines the quality of leisure needs.

B. Ecologic

One must consider under this heading autoecology (relationship of the single organism and its environment) and synecology (which is the relation of a community with its environment). These can be further divided in terms of plant ecology, animal ecology and finally physical ecology (in terms of energy sources, water supply, etc.) In a broader sense, social ecology, which is the spatial distribution of a population in relationship to material and social causes and effects in part has been discussed when group determinants were considered.

C. Technologic

Technology, in itself, is not a prime determinant, but secondary to those already outlined. It arises out of the needs for

compensation for the more primary determinants. More recently however, the development of enormously powerful technologic forces, in terms of energy, communication, transportation and housing, etc., has caused technologic forces to assume a primarily determinant role in many instances.

Technologic determinants, as we have seen during the past generation, can overwhelm natural ecologic phenomena and turn, what were once positive ecologic determinants into negative ecologic determinants or to destroy the original ecologic resources altogether.

Pathways Towards Solutions

This paper is essentially a partial outline, the purpose of which is to stress the necessity to comprehend that human needs have multiple determinants. These determinants are diverse and subject to modifications or changes in response to various forces.

It would appear necessary to have definitive research programs designed in their initial aspects to define in detail specific, basic individual, group and societal determinants. These determinants should be defined qualitatively, quantitatively and in terms of rate of change. Attempts should be made to delineate specific parameters of measurement for these determinants.

The more difficult task would then be to consider the interrelationships of these determinants projected in time. The interrelationships of the determinants will demand a different order of qualitative and quantitative elaboration. This will require parameters of measurement

that will express interrelationships and interinfluencing forces.

This basic conceptualization would permit a valid, flexible, projection as to human needs both individual and societal.

Finally these accomplishments should be directed towards designing an educational program whereby these concepts and insights could become widely appreciated and implemented.

THE DEVELOPMENT OF HUMAN NEEDS AS A HISTORICAL INTEGRATION OF
INCREASINGLY DIFFERENTIATED AND ENCOMPASSING LEVELS OF ACTIVE
INTENTIONALITY

By Radmila Nakarada, Sociologist and
Dragoslav Grujic

The nature of human needs psychology defines in several different ways and it is necessary to give a short critical survey of them in order to expound our conception more clearly.

Mechanomorphic, objectively oriented psychologists starting from a simplified biological model of homeostasis, try to reduce human development to a series of externally determined learning sequences, in which motivation is first of all, as a simplified biological satisfaction - dissatisfaction, a complementary factor in creating newly learned relations between behaviour acts, and secondly is a by-product of the learned behaviour.

All biologicistic approaches to motivation have had in common the concept of the state of motivation as a "passion in vain", a sporadic abnormal state, the basic intentionality being reduction and elimination of tension. Satisfaction is freeing oneself from tension, but the ultimate satisfaction is really freeing oneself from satisfaction itself.

The authors gathered around A. Maslow and representing the humanistic approach to psychology consider the intentionality towards acting and acting under tension as one of man's primary characteristics. However, this concept of intentionality has two flaws: 1. this intentionality is in the psychological and epistemological sense globally declarative; 2. in trying to concretely define this idiosyncratic intentionality (but not wanting or not being able to go into the natural scientific and social-historical study of man's phylogeny and ontogeny) Maslow's concept remains a biologism humanised on the surface: the specific human need for selfactualization is instinctive it is an inborn talent. Maslow's biologicistic simplification is an unilateral, linear,

hierarchical relation between the so-called "higher" and "lower" needs.

Psychological interpretations developed on the basis of Marx's concept of man give interesting exceeding of biologism which must be taken into consideration. Leontyev tried to achieve a psychological concretisation of Marx's idea that the man's generic being is the result of his social history, and that the generic being is the bearer of the principles of human action. He shows that this interiorisation of the universal activity principles into the psychic, differs essentially from the creation of adaptational habits and individualization of biologically given action possibilities in limited concrete conditions which is only possible for animals. However, this author in defining man stresses the social aspect; the individual is understood as a passive receptor in interiorising the social-historical experience. Marx however, did not think onesidedly about this question. With Marx the individual and the society are in constant mutual creative relation, through which human psyche is formed and among its components - motivation.

Opposing the onesidedness and developing the positive contributions of the presented views we determine the specific character of man in the following manner: the basis on which animals relate to their surrounding, to members of their species and members of different species -- is biological inheritance, innate action program which is modified but not essentially, that is, it remains qualitatively unchanged, unsurpassed. With animals mental mediations reach high as instinctive and concrete pictures and immediate practical intelligence. Man is born with "weakened" biological inheritance, but not because he is a defected animal but because his generic being is not given in that inheritance but is created and preserved in the whole historically developed human social coality. That is why man besides having a multilayered biological basis has also an extremely vast and undifferentiated biological level which makes possible the interiorisation of this social, historical, generic being into the individual psyche. Ontogeny of man is therefore not a biological reproduction of phylogeny. Only when an open totality of biological ontogeny is realised through constant interaction with the totality of the social historical generic being, only then can we speak of human ontogeny as a constant creation within the individual being.

This mutual creative interaction of human ontogeny and phylogeny is a continuous multitude, totality, differentiation, hierarchisation and at the same time integration and universalisation of the active subject-subject and subject-object relation.

Every higher level of the mental and social development emerges when mediation of the previous developmental level integrates in new mediated mediation in this way building new historical totalities, new qualities of increasingly differentiated and encompassing levels of active intentionality.

This means that man is not what he is because he conforms, adapts to some immediate - spacial-temporal - formal social locality; on the contrary, in the development of his human intentionality mediated are many active and very distant (in time and space) human communities. Directly and indirectly, concretely and universally man strives to open on each authentic level of development a specific open system of differentiation and hierarchy. In the case when the immediacy is (still) partial, when the universality is (still) empty and defective one could speak of the alienation of ontogeny and phylogeny from newly created possibilities, of (still) unfinished differentiation and integration, of the unachieved hierarchisation and universalization; human needs can be (still) unrealised. Human intentionality is thus always acting towards the future of new essential creations.

Up to now in the "prehistory" of mankind two aspects of the action dimension have dominated: production of things and their political management. For those who worked in the production itself work was experienced as external, obligatory and as a mean of maintaining the physical existence. Scientific creation was placed in the secondary superstructure or it was considered an accidental by-product. The same was thought of the emotional social production that is, the esthetic, and ethic expression.

Individual human being has been exteriority subordinated in the society, his active will reduced to a danger for the institutionalized political will. Development of his motivation, emotions, intelligence is reduced to innate biological pressures and structures which ought to be just socialised and modified.

What are the new characteristics and new possibilities of our actuality? Scientific technological revolution has made it obvious that science is also an important active productive force and not a secondary by-product. The participation of workers in political management, besides all its insufficiency and partiality, is also in various ways and in large portions of the world, a positive contribution. At the same time with the contributions of particular sciences important steps are made in improving the technical work conditions (which, together with the previous factors, doesn't change in the final instance, the basic quality of the existing, but is nevertheless a change). In the emotional, esthetic and ethical sphere a series of important changes are also occurring; art is becoming less a secluded reservation of spiritual life and is more and more a way towards an esthetic experience of one's own everyday life (of course, this is not an absolute change; art is still to a great extent a forced means of profit achieving consumption into which consumers immerse selfdestructively).

Moral protest, against political repression, has united until then private individuals into various social groups.

In all basic, essential dimensions of man's world "organs" of human individuality are further developed and created but a whole human "organism" is still not integrated in the psychological or social plan.

But because it is a matter of complete human integration it is hard to believe in the assertion that any particular contemporary occurrence can be the general integrating principle. And since each of the mentioned dimensions is an essential dimension of man's world, and since their development up to now has shown a tendency towards differentiated mutual binding we can conclude that the revolution of our present and of our future cannot be just a scientific-technological revolution, nor a classical political-economical, nor an intellectual-moralistic, political-esthetic, sexual-emotional. Instead of ending with an abstract general phrase that the revolution, which is in process and which is before us, will encompass all these dimensions in a truly new human integration, we should say something more concretely about possible solutions along the mentioned dimensions.

In this sense we wish to analyze three existing groups: encounter groups, workshops, and Kabouters because regarding their activity up to date they

have in their specific mutually different, creative, constructive, concrete ways, succeeded in surpassing specific dimensions of the existing, specific dimensions of alienation, by discovering new dimensions of humanization, new possibilities of human relation and communication, enabling the individual to be creatively active, developing and concentrating on actions on the micro-social level, implicitly widening the concept of revolutionary subject, Aware that a change is really a change only when integrated on the level of the global society, when it produces a new higher, concrete social, historical, human totality, we deal with these groups because we think that the path towards such a change leads through countless individual and micro-social integration. We are of the opinion that these groups are not fads but a significant expression of human intentionality offering new and further creative possibilities of human realization. These possibilities we deduce from their accomplished successes but also from their present limitations.

The basic general limitation lies in the fact that each of these groups has a specific sphere of interest, each of these groups emphasizes (not necessarily intentionally) some aspects of the human nature: they do not approach Man as a whole generic being (when they strive for such an approach it does not surpass the level of a declarative theoretical abstraction). As a consequence, limited insights and changes are created which cannot result in a completely fulfilling, self-actualizing human activity.

Encounter groups were initially developed by K. Lewin and further developed by many scientists including C. Rogers. These groups have grown out of a spontaneous demand for close and real relationships. Individuals in the group come into much closer and direct expressive interactions than they do in their ordinary every-day life. Encounter groups, tend to "emphasize personal growth and the development and improvement of inter-personal communication and relationships through an experiential process." (C. Rogers, ON ENCOUNTER GROUPS, p. 5). The basic process through which these aims are achieved is, as one participant (whom Rogers quoted) formulated -- "journey to the center of self". Within this group insight is limited to the personal, emotional, expressive and cognitive to a limited degree and therefore, besides all its sharpness, directness, it is abstract for the global, general social determination in which the

individual is situated. In this way these groups confirm on the social level the isolation, privateness of the individual. It has often been stated that the changes that occur, are not lasting because these groups are left outside of life and usually represent only a temporary gathering with no follow-up, continuation of human relation, communication action, a reference point, not a way of life.

R. Jungk in his future research activity has dealt with the idea of creating workshops of the future, ultimately conceived as organs which would insure democratic participation of all in creating the desirable future. At present workshops are being created with the aim of outlining sought out futures through intensive discussions on the basis of participants explication, insight, dissatisfactions concerning the social situation, society. In these groups the dimension that is prevalent in the encounter groups, the personal, psychological, emotional, is neglected. The general is not interrelated explicitly with the personal (whereas the case is the opposite in encounter groups). The problems are seen as external, global: they are experienced as unattainable, inaccessible, beyond the range, reach of individual action. Thus, even though participants come to new insights, to a perception of a possible action, because the directedness towards action is on the global, cognitive level. Mediations between the vision and the reality are not defined, insights are not situated in the individual life.

Kabouters are groups which act in Holland. They have determined their aim as creating antiauthoritarian society. They have succeeded in finding the possible forms, levels of action within the framework of the existing, which for instance is a problem for the workshops; and they have succeeded in engaging various strata of the population. However as do the two previous groups, this group also stresses one dimension-action as such. These groups are also not groups of personal relations, but of relations personalized by action. Actions are of limited circumference. The participants are involved in the activities of this group outside their essential productive activity, professional life. This relative periphery of the groups is a necessary condition which enables the group to act within the existing reality but it also limits them in finding mediations between the existing and the global aim (their aim and their actions are not on the same level so qualitative mediation of levels is necessary). As a result actions decrease in

numbers and so does the intensity of acceptance.

In this short and rather simplified analysis we have tried to show that all these groups emphasize the dimension, human needs, which they consider neglected. The problem is however in the fact that all these dimensions are neglected, that is, Man as a concrete totality. Therefore the solution is not in their unrelated consideration but in their integration. Integration in this case would mean organizing such new groups which would be a creative synthesis of the basic principles of these three groups. Such an integrated group would enable man to concretely relate to himself, other human beings, to the society, science, action. In order not to be a reference point, an inadequate temporary substitution amidst the partial and empty life these groups must become a continuous way of life where action would be common mutual results and a common basis for further deepening and creating new actions by people who are in close and continuing relationship. In other words they must become what Gibbs terms as "imbedded" groups.

These groups could be created in several ways. The first step could be an organised meeting, encounter of interested participants of each of these groups in societies, where they exist. The encounter should be directed towards a critical evaluation and exchange of experience, explicating the limitations felt, gaining insight about new possibilities, reinforcing the positive achievements and values. If a need for a more encompassing group becomes evident it could be created by enlarging the scope of the existing groups to include the dimensions that are at present under-emphasized, or by creating new groups which would benefit from the experience of each of these groups and represent a creative synthesis. The content of the group may vary, they can be made up of people of various social status, equal social status tied by a common production activity, or simply of interested people. Creating new groups, as well as broadening the scope of the existing requires perhaps at first a team of trained facilitators consisting of scientists from complementary fields (for example psychology, sociology) but who would not approach the group experts or manipulators but persons with an explicated need for such a synthesis in their own life, explicated active intentionality, who would then be able to further develop group activities through a

more active directness toward a synthesis of Man's essential dimensions, a broader encompassment of his generic being. Because of the possible role the scientist might be playing in creating such groups, because these principles of intentionality toward the realization of the generic being are basic human principles, this whole paper can be interpreted as an invitation to the participants of the Conference to become in their individual lives the subject of their action, to adequately integrate their work, personal life and science; we who profess to define Man can not but begin by defining ourselves.

Notes

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AN ASSESSMENT OF THE ROLE OF SCIENCE TECHNOLOGY
AND RELIGION IN THE LIFE FULFILMENT OF MAN
AS AN INDIVIDUAL AND SOCIETY.

By Gopal Puri
Human ecologist; biologist

Introduction

In the evolutionary development of form and function, life has reached a stage which is variously described as an intelligent animal, perfect machine or demi-god. In the ecological sense life is a dynamic system. To put it in terms of Buckminster Fuller, it is 'continually sorting and re-arranging atoms in methodical molecular structures, To ensure performance each species is genetically and environmentally programmed. Each sorts and re-associates atoms as its genes cope with and alter environment, which in turn alters the species behaviour'. Armed with energy derived from fossil fuels man is holding in his two hands the two threads of the Universe - time and space, but he has yet to learn how to weave for himself a pattern, fitting his total self in it. Too much has happened in too short a time, giving man little time to enter into his contemplative shell and programme himself for the future, which no longer seems distant. Of late man has begun to live in future and we have to ask the future of the future.

The discussion of such a vast topic is difficult for anyone who is trained in the vertical-development concept of education, but this conference permits, I hope, to let a specialist peep through the keyhole into a neighbouring room or two and go up or down as the situation may demand to inject a reasonable coherent thought or two. This is precisely what I have attempted in this short paper. There are many facets - all of which fit into one single theme, Man and his future, and effort has been made to stick to this concept. Science, technology and religion cannot be separated from the life of man or society, so the inter-dependence and interaction of various factors in total ecology of man is far too important to be taken in a leisurely fashion. A way of life has to appear - respect rather than subjugation is the principle of Love in this game. We are all the time evolving and the aim must be the betterment of the species - let us now consider the various needs in this process of development.

No one need is basic

Man does not live by bread alone; but hungry man is an angry man, when all animal qualities become manifest in their intensity and ugliness. From wordy strife, hot war to cannibalism - nothing is sacred - every human value is attacked. In war, man and God both fight together on the side of the Victor and the defeated party is brought to justice before man and God - this is the belief, especially in the Developing Countries.

Is war essential to provide bread for those who have not? More than three quarters of the world population, today, is malnourished. Famine, starvation and death live on the doorstep of Green Revolution countries. Is it possible to solve the problem of food in a peaceful, humane way?

Every day there arrive in the world more than 200,000 new mouths to compete with those who have not got enough for themselves. It is here that the present becomes future in no time and then all of a sudden all is swallowed by the fathomless past. The story of the poor is centuries old, while the rich are growing richer day by day - widening the gap between the two worlds that are already poles apart in their ecology.

The egg is bad only in part !

It is not in the realms of food alone that the gap between the poor and the rich is becoming wider, but it is in every other section, as human comfort, happiness and joy. Education, health, housing, energy, transportation, life span, disease are some of the multi-faceted problems that defy comparison among people of the two worlds.

Figures and statistics are poor judges, and become superfluous in situations in which the rising tide of increasing human population gets steeper every second with 3 new babies. Every day leaves a new remainder to be divided and sub-divided. Some pity the situation only for its unevenness.

Pollution in over-rich countries has recently brought about another dimension to the world poverty of material resources. The increasing greed of growth-hungry countries has further upset the hope of any balance that one may work to achieve in the world of today or tomorrow through politics or prayer.

Scientists and others alike have begun to talk of Doomsday politics and ethics of the survival of civilisation and the human species. Blue-print for survival, zero-growth planning are some of the questions taxing human imagination, at present.

In an edifice rotten to the core every corner presents a new problem. In one third of the world - the rich world - population is expanding in urban conglomerations and with it grow the dragon headed problem of overcrowding, mental stress, crime, drug addiction, alcoholism and so on. Law and order, health and social security are all costly operations that ultimately affect the department of bread. In this field also, the difference between the rich and the poor countries is by no means small. In the poor countries, over-crowding means poor sanitation and infectious diseases. In rich countries, however, the difference is only in the pattern of disease, the result being much the same. In one case, epidemics are voluntarily invited again and again; in the other they recur, being malignant in nature.

Why this disintegration?

The human society shows signs of disintegration, with institutions like marriage, family, man-woman relationship, etc. all in danger of falling apart. The stress and tension that these cause fill the minds of people with fear - all kinds of phobias, particularly agoraphobia. These result in states of chronic depression, schizophrenia, psychosis, neurosis and neuro-somatic disorders. These, combined with strikes, walk-outs, work-to-rule, etc. in various sections of the society make affluence and freedom a costly business. The young would call this society a sick society and revolt and fall-out have become the fashion of the day, disclosing yet another gap between individuals - the generation gap.

The whole is bigger than the sum of its parts!

On a global scale, man is faced today with problems of increasing human population, decreasing natural resources, a growing demon of pollution, hunger, disease - all unequally distributed, only in their origin, but engulfing the entire world in their affect. The blocks of the 'haves' and the 'have-nots' are equally to be blamed; when considered in totality; because the danger of war - a global nuclear war - aiming at an all-out destruction still looms large in the mind of man. Man has to make a choice between life and death pretty soon and then decide how to direct his campaign in one or other direction, and act before it is too late.

The biggest question today is of those who are born today or will come into the world tomorrow. What sort of world are they going to inherit? The future - is it going to be dreadful or an utopia? Are we ready to prepare and educate ourselves for that future?

Is Science and Technology matter over mind?

Science and technology in the past 2-3 decades have provided man with a tremendous range and dimension of bodily comfort. Although every revolution, from the agricultural through the industrial to the nuclear, has increased unemployment, making man more redundant than efficient, the ever increasing army of energy slaves has made life easy, pleasurable and comfortable, only for some. The greatest benefit of these advances has been reaped by people in developed countries and there too, poverty amongst riches is not unusual. In the developing world three quarters of the world population has not received much, except more hungry people, as a result of the cut-down of death rate through medical advances. Much of the sophisticated technology is not suitable for those countries. Intermediate technology, though preferable in some sense, is too slow to make these people any richer than what they are. The aid programmes, charities, loans etc. from the developed countries could become ineffective due to the all round poor development of the economy of the developing countries. It may take a century for any of the developing countries to reach the present standard of living of a European nation. Even this is unlikely to happen as the demand of the developing countries themselves for material resources is going to increase many hundred folds in the next 20-25 years and the developing countries would learn at their cost to expect more and more of their raw materials, especially energy resources for bread and butter, making themselves in the bargain poorer still at home. The utilisation of energy of sun, wind, tide and even gravitation is being considered for the developing world. But who will pay for this development? People in the developing world are more interested in spiritual resources than any material resources. Can this belief be exploited to achieve some sort of balance between the needs of the rich and the poor?

The need and the greed!

An Arab proverb says 'If you have two pennies left, spend one on bread and one on a flower. Bread would give you life and the flower an urge for living'. It is abundantly recognised that the major problem today is not the survival of Man alone, but with it his civilisation comprising of urban culture, religion, music, art, science, humanities etc. All these in ultimate terms need energy for survival. Although solar energy seems to be an unlimited flow energy, its conversion into food is limited. Some latest calculations reveal that a field of alfalfa plants 2×10^7 in number weigh about 17,850 lbs. and they represent 1.49×10^7 cal energy. The conversion of this energy into animal flesh produces about 4.5 calves, weighing 2,250 lbs. and energy equivalent of 1.19×10^6 cal. This amount is sufficient to produce a boy of 105 lbs, representing 8.3×10^5 cal. In the food pyramid starting from the plant

through the animal to the human being, there is some dissipation of energy. The food of a human adult in vegetation equivalent represents a daily requirement of 2.2×10^6 cal. At the world population of 2.6×10^9 and to provide food for all there is a need for $(3.6 \times 10^9) \times (2.2 \times 10^6) \times 365 = 2.9 \times 10^{18}$ cal/year. In terms of vegetation this is equivalent to 1/250 of total plant growth production in a year and in terms of meat equivalent it is 1/25 of total plant growth a year. It must be remembered that to maintain the world a human population of 3 billion we need plant yield sufficient to accommodate 14.5 billion animal consumers because the world pig population consumes as much as 1600 million humans and the world horse population has a protein intake of 650 million humans.

This estimate is based on the assumption that human food required is for an average adult, but an average American consumes more than 50 Indians or 60 Burnese, with more than 4,000 cal and more than 100 gm. of protein, mainly animal protein daily. If less amount of food is accepted then perhaps it may be possible to provide some relief to malnourished, starving millions in the world. It is interesting to note here that there are 50 million people in the U.S.A. who are suffering from obesity. If this excess food is considered to be 1,000 cal a day or 1 lb. excess meat a day then the obese U.S. population is consuming 50 million lb. more meat a day. This represents 100 million lb. livestock, or 100,000 extra head of steer a day. In economic terms obesity is costing the U.S.A. 36 million head of cattle out of the 100 million cattle population of the country and a herd of 150 cows need 15 acres of land to support, which means a lot more land that can be spared from other uses. If the fat people of the U.S.A. could be persuaded to release a 2,000 cal diet a day from their ration then 25 million really under-nourished people can be fed. The Americans would still have 3,000 cal a day because 30-40% of the food taken in is lost unassimilated. Money saved from the health bill of these people can house, clothe and educate 25 million people at least.

The Rat Race

Let us take another side of the picture - the expenditure on defence. If the aim of the world is to live in peace, then why should the nations of the world continue the rat race in building materials for war? A pessimist would say that out of the 3,421 years of recorded history only 268 had seen no war. Are we preparing for history to repeat itself? If not then all this destructive weaponry could be replaced by

livingry. It would then be possible surely to give a decent standard of living to everyone in the world. A few examples may make the point clear. It is estimated on reasonable grounds that one \$104,616,800 naval weapon plant could pay for 26-160 bed hospitals at \$4 million each. One \$275 million aircraft carrier would pay for 12,000 High School buildings that could provide education for illiterate people. One new prototype bomber fully equipped would pay for 250,000 teacher salaries for a year, or 30 Science faculties, each with 1,000 students, or 50,000 tractors, or 15,000 harvesters. One \$105 million atomic submarine would pay for \$132 million in famine relief aid. This is not all. The per capita annual cost for military personnel in the U.S.A. is \$4,345, in Belgium \$1,814; in Greece \$430; in Thailand \$400; in Taiwan \$218, and in Korea \$145. All this looks senseless and sad in the world where three quarters of the world population is hungry. We shudder to learn that for every human being on earth there exists today a stockpile of 28,000 lbs TNT equivalent explosive. This works out to be 14 tons of explosive for every person alive or for every pound of human flesh there are 200 lbs of self-annihilating explosives.

What are people for?

In such a situation one may be tempted to ask with Julian Huxley - what are people for? Bomb fire for atomic bonfire! Cannon fodder for rival nations! Labour fodder for rival economic systems! Religious fodder for rival religions! Disease fodder for rival parasites! What is required in human population is quality and not quantity - a life of fulfilment rather than frustration! Beauty and not beastly ugliness! Variety and not vicious monotony! More knowledge and less ignorance! More enjoyment and less suffering! Such should be the aim for the future.

How can the population of the world be reduced? Some scientists are of the firm belief that Britain cannot support more than 5 million, although the present population of the country is 55 million and it could increase to 70 million or even more by the year 2,000 A.D. Is abortion the answer? Influential sections of the Church are against it. Followers of other religions do not look upon abortion with favour. India is expanding her Family Planning programme, so is Japan and many other developing and developed countries. There is very little success, however, at present. What is the hope for the future?

The politics of necessity

One must not forget in this connection that in most of the developing countries a large family is essential for economic consideration and family stability. The bulk

of the population, for example in India, up to 75% follows agricultural pursuits, with the traditional hoe and plough technology. More men in such a situation are essential for survival, especially so when the climate makes one year of famine in a 4 - 5 year cycle and one flood is inevitable every 3 - 4 years. 90% of the population of India lives and would continue to live surely up to 2000 A.D. in 600,000 villages, spread all over the country, whose road system is not satisfactory, especially during the rainy weather. People of this vast sub-continent have begun to accept their lot as God-given luck, in most cases 'ill luck; with poverty, disease, illiteracy in abundance. They take things more philosophically than others and get consolation from the religious belief, given to them by their ancestors - It is God's will. 'Thy will be done' is the pattern of life; the birth, death, rebirth sequence goes on undisturbed. People are not happy but they are contented and to them spiritual consolation and peace of mind is not a pessimistic attitude but it is a dynamic view of the world. To them this world - the material world is Maya - an illusion - a shadow of the substance, which is not visible, but can only be experienced, lived and enjoyed. The meek and the poor will inherit the Kingdom of God on earth. Religion is thus a very powerful influence in the life of a majority of the people in the poor developing countries. Can we give them something better than religion?

Communism has made some inroads into the rank and file of people in some developing countries. There have been upsets in their traditional way of life. In some cases Governments have been replaced by military dictators, but except for momentary upsets no major shifts have occurred in the pattern of thinking of the people. Theocratic Governments voted in by majority in some countries have further re-affirmed the faith of the people in their religion, culture and tradition, rather than in science and technology alone. Only those sections of technology that do not interfere in their religious and cultural beliefs are accepted and others are outright rejected. One sees, therefore, cows and Rolls Royce together on roads, bullock carts and a Jumbo Jet - both are the means of transport.

Religion seems to be the magic wand in the developing world. Masses are awakened, hypnotised, alienated, absorbed or rejected through it. The ecological consequence of this must, therefore, be discussed at some length, as a possible way out of the problem.

Religion is the means and the end

Even in the days of advanced science and technology religion has by far the greatest single influence on the mind of mankind. The last word from the mouth of dying Gandhi or the first thought in the mind of man landing on the moon was none else than God. Religion has shaped the course of human history, much more than politics or science has done. It has cemented the bonds of brotherhood and has also divided mankind into rival groups. The inter-religious jealousies and rivalries and intra-religious debates, strifes and wars have at times darkened, but have generally glorified the pages of history.

There are 11 world religions today and each has millions of followers - rich and poor, low and high, maniacs and intellectuals, scientists, philosophers and the man in the street. Advanced technology and scientific experiment in the 20th century have brought the different religions on a common platform - thereby giving a chance for the flowering of new faiths - a multi-religious religion or a scientific-religion. In 1648, Lord Herbert of Cherburg died. He had initiated a comparative study of religions and gave the following scientific definition of religion of the future.

1. There is a supreme Numen - possessing 11 attributes - Blessed, Self existent, First cause, the Energy and Purpose of all things, Eternal, Good, Just, Wise, Infinite, Omnipotent and Free.
2. It is man's duty to worship the supreme Numen.
3. Virtue and piety are parts of worship.
4. Sin against the Numen must be repented.
5. The world is morally governed. In future life man gets the due reward for his deeds.

To most Western people religion has still the original latin meaning - to bind or a relationship, but to all Easterners religion is a way towards God. Whether one looks at Shingo-ism, Tao-ism, Buddhism or Hinduism, it is all the same: The oldest Vedantic religion uses the word Dharma - duty or the way of life for religion of Man.

Although religious conflicts produce undesirable results however, on the whole as a world wide phenomenon, religion concerned with processes rather than persons and the Way rather than rituals is not simply meandering but directive with a goal in view. It produces happy individuals with a certain integration value. The pursuit of truth, the idea of fear, the presence of an idol and symbols - mental, verbal or physical - are an aid to concentration. One of the greatest philosophers, Sankar, in the 8th century A.D. cried: 'O Lord, pardon my three sins:

1. I have in contemplation clothed in form Thee who art formless.
2. I have in praise described Thee who art ineffable.
3. In visiting temples I have ignored Thine Omnipresence.

Such ideas are echoed in Christianity and other religions as well. Jesus is reported to have said - 'Kingdom of God is Entos humon', i.e. 'already realised in your midst' or realised inwardly and not by outward ceremonies.

In his, 'An Historian's approach to Religion' Arnold Toynbe has stated - 'In the heritage of each of the higher religions we are aware of the presence of two kinds of ingredients. There are essential counsels and truths, and there are non-essential practices and propositions. The essential counsels and truths are valid at all times and places, as far as we can see through the dark glass of Mankind's experience up to date.... In fact, the counsels and truths enshrined in the higher religions would appear to have still longer lives than the higher religions themselves'.

Where Religion and Politics meet?

Compared to politics therefore, religion has a greater appeal to human mind. This was the experience of Americans - the super power, today. John Galtung in 'Different concepts of defence' has expressed it thus:

'Politics is a battle about people's loyalty. This battle must be pursued by subtle means and not by terror and military warfare. The American people have learned this lesson in Vietnam, and have also learned that even a super-power has its limitations in an ideological war. The more subtle way of stopping this increasing violence and of changing the social order in the future is non-violent resistance and defence.'

Non-violent call is given by every religion as a goal of life. How does violence enter man's mind is illustrated in Gita as under:

'When a man dwells on sense objects
Attachment springs up between him and them,
From attachment is born desire,
From desire springs wrath,
From wrath, again is born delusion;
From delusion, the confusion of memory.
When memory is lost,
Perception is lost,
And when perception is lost,
So is he.'

With the loss of perception of the man as a man there comes for him the end of the Universe. Buckminster Fuller says that 'Universe is the aggregate of all humans' consciously apprehended and communicated (to self or others) experiences'. It is entropy. Man is brain driven and so far he is the best of anti-entropic sorter and re-arranger on earth. He is continually sorting and re-arranging his thoughts, so changing his environment. Fred Hoyle believes that humans are present on at least one hundred million planets. One can, therefore, believe

with Norbert Wiener that as man is the ultimate anti-entropy, so he 'seems essential to the Complementary function of the Universe. So the probability of humanity annihilating itself and thus eliminating the anti-entropic function from Universe is approximately zero.' This must come as a shock to Doomsday prophets. In his book on 'Where science and politics meet' J. B. Wiener states that 'our problem is no longer that of allocating scarce resources among a needy population, but one of creating the social structure which is needed to achieve a wise and full utilisation of our industrial and technical capabilities.' In his inaugural speech President Kennedy echoed somewhat similar sentiments - 'Let both sides seek to invoke the wonders of science instead of its terrors, together let us explore the space, conquer the deserts, eradicate disease, tap the ocean depths and encourage the arts and commerce.'

Vladimir Lvov, in an article on 'Man and the Future' remarked that further discoveries in science and technology would enrich the life of man a lot more than now. He differed from the view of those who consider that human mind will decay and degenerate with further developments, but he asserted that the 80 million tons of human brain matter on the earth will act as a catalyst and change the shape of the earth and the Universe. Pierre Teilhard de Chardin's sphere of activity - the Noosphere would sooner or later extend to the whole Universe and man will be able to use and control the energies of Nuclear, Gravitational and Electromagnetic fields, first of the nearest star - the Sun - and then of the entire galaxy and the neighbouring worlds. To the zero-growth scientists it would come as a surprise to know that 'A. Baumstein believes that at the height of the space era no less than 10^{66} people will be required. Today there are slightly more than $3 \cdot 10^9$ - 3,000 million.' In these pronouncements men of science come near to the men of religion. The loaf and fish legend of Christ, Faith Healing, Thought Force and other miracle stories attributed to religion have the basic truth which men of science and technology can both probe into together and understand. S.P.R. Charter regretted at the lack of appreciation of Scientists and Humanists of each other's work. He said that men of science should become poets and men of letters scientists. Men of letters and men of science traversed paths that did not converge and this estrangement is of concern to ecology of man. We are reaching the stage of literature explosion - with data pile growing bigger and bigger and just as wood pile gives no warmth the data pile gives no knowledge. Such a knowledge is barren, its voice coming through intellect is unconvincing. It can only bear fruit when an action is based on it and when it grows into our being. Harmony between knowledge and being is God-mindedness. This is the first lesson in the school of religion.

Both the scientist and the man of religion ought to be responsible for the social consequences of their knowledge. 'Knowledge can be power only when there are able people to use it', said Pierce.

Is there a choice?

There is one supreme reason for which man turns more to religion than to politics or science. Science would at best represent man as the highest developed ape - the naked ape, with all the animal qualities in the forefront. But religion elevates man to God. Jesus said 'I am in the Father and the Father is in me'. The same was expressed by St. Paul - 'I live yet no longer I, but Christ liveth in me'. Muslim mystics proclaim that 'I am he whom I love, and He whom I love is I.' Gita affirms that God descended in mortal frame is Krishna, who in inspired words taught Arjuna to know Him, come to Him, live in Him and be Him. This attractive theme is further developed in Yoga thus: 'Man is God. His real nature is coloured in ego, which drives his animal urges - attachment, wrath and fear to hate. This chains man and leaves him weak, imperfect and unhappy. Man can control these by realising moral causation. It supports spiritual order of the Universe and of Freedom. Mind is involved in this freedom and bondage - Animal urge is subdued, slavery is conquered, so is greed, fear and anger. Mind will radiate fundamental aspirations of Love, Truth, Beauty, Power, Calmness, Light and Freedom. This aspiration saturates the mind of man, the spirit becomes articulate and comes in relation with God. Nature of God is Truth, Love, Beauty, which can be attained by detachment. Attachment gives man fear, hatred and anger, making him animal-like. Western philosophers have dwelt on a similar theme through reasoning, but the essence of Eastern religion is not intellectual but primarily experience. Bertrand Russell said that 'The truth is like a shining Goddess, always veiled, always distant, never wholly approachable, but worthy of all the devotion of which the human spirit is capable.' Truth is attainable only through self-experience. Namath says: 'Highest is Truth, truthful living is higher still.'

Beauty, Truth or God, lies within Man as Self or Atman. The Upanishads speak of Self as non-attached witness of the three states of waking, dreaming and deep sleep. 'Thou art That' is the voice of this man dissolved, involved and absorbed in himself. When asked he shouted - I am Brahman - the supreme spirit - the microcosm experiencing the state of macrocosm inwards. One explores, experiences and realises himself in self through the self - a state of continuum - supreme Joy, Highest Bliss, Nirvane or salvation. Such is the lure of religion. Science - can it give this satisfaction to man? It can give him bread and life but can it also give him the urge to live? For man today saturated in plenty and affluence is seeking this urge to live. There is a danger that man may not lose his mental equilibrium. In the vastly expanding urban society the individual has little freedom to think and act as he thinks, and speak as he thinks. Science and technology give him chains and attachments from which are born desire, wrath and delusion. Man wishes to live in the heaven of his own self - when mind is free spirits are free. Hence there is food for mind and soul and not for body alone.

Heaven on Earth

Body of man is dust, so dust to dust is the law. Both scientists and the humanists meet here. 'Dust like the circle is the symbol of eternal time. The world of dust is never at rest and the potential energy of the surfaces of the granules in it is enormous.' Creation - preservation-destruction/reconstruction is the continuum - the trilogy - the three faces of God represented as Brahman, Vishnu and Shiva according to the Hindus; or Father, Son and the Holy Ghost, according to the Christians. The three Gunas or qualities of the Universe are present in man too. Triangle is the basic unit of the Universe. A dewdrop of nectar is as potent as an Ocean of nectar. There is a joy in thinking like that because according to the doctrine of Karma 'Imprisonment and release is made by Thy decree - Nobody can interfere in it'.....'What is pleasure to Thee, that exists. What Thou Thyself doest, that is done. What is pleasing to Thee, that will be done' echoes the Adhi Granth (the bible of the bibles of the Sikhs). This is Heaven - Heaven on the earth. Tagore gives a vivid picture of this Heaven on the earth in his poem, Lovers Gift, as under:

Where is heaven?
 You ask me, my child -
 The sages tell us it is beyond the limits of
 birth and death; unswayed by the rhythm of day and
 night, it is not of this earth.
 But your poet knows
 That its eternal hunger is for time and space,
 and it strives evermore to be born in the fruitful dust.
 Heaven is fulfilled in your sweet body, my child,
 In your palpitating heart.
 The sea is beauty it drums in joy,
 The flowers are a-tiptoe to kiss you.
 The Heaven is born in you, in the arms of the mother-dust.

Science has tried to create this sort of fulfilment in man by drugs, LSD and other chemicals, but these have been proved to have more harmful effects than pleasure. It is the joy and not the pleasure that is the goal of man. Prayer gives this to man. After a hard day's work man can close his eyes and lose himself and gain all that gives him the urge to live. Prayer and meditation through Upanishadic methods take one from the physical plane to a spiritual plane. This uplift is through the five sheaths in ascending order - the gross physical sheath, the vital sheath, the sheath of the mind, the sheath of the intellect and finally the sheath of bliss. This brings one to the state of Ultimate Reality which is Godhood.

It is often stressed that religion teaches man to renounce the material world. This is not correct, because renunciation is to renounce the desire and attachment to

the material world. Live in water like lotus, with your head up, leaves unwetted but rhizome and roots completely immersed in mud. This is beautifully explained as under: 'The Vedas believe in the eternal unity of existence, which holds in its embrace all that has come to be. As the Reality behind the Universe it is called Brahman; and as the indestructable spirit in man Atman.' Brahman is described from two standpoints - a. Acosmic or transcendental - indestructible by word. b. Cosmic or phenomenal, destructible.

The transcendental Brahman cannot be expressed by words and is expressed by the Vedic formula - Neti, neti, neti - not this, not this. In speaking of this facet of Brahman the Pure consciousness, the technique of negative is employed because it is unknown and unknowable by the finite mind and can be experienced only in the depths of transcendental meditation in the waking state.

The cosmic, Saguna Brahman or the Personal God has the attributes - Creator, Preserver, the Destroyer of the Universe. It is the controller of All - the Lord, the Ruler of All. Everywhere are His eyes, everywhere is His mouth, Everywhere are His arms, Everywhere His feet. These two Brahman - with and without attributes - active and non-active - are one, not two separate entities but are two aspects of the same Reality. Brahman appears as Personal God through a Power inherent called Maya - a kind of metaphysical nescience which first conceals the transcendental spirit and then projects the Universe.

This experience of contact with the Reality gives man the urge for living. It is no doubt that bread is the life but life without an urge to live is vegetative growth without flower, fruit and fulfilment. Any food which gives no fulfilment is food allright, but it only fills the stomachs of animal in man and not of man in man, nor it arouses the God in man.

Conclusion

In conclusion, I should like to emphasise that in the world of so many difficult problems science and technology alone cannot bring the lasting solutions. There is no need to fear - Pollution or over-population or resource depletion can be solved in the mind of man with spiritual and divine guidance. Man both in the developed and the developing countries needs this guidance, more than the power and energy from tools of science and technology. Material riches have divided the humanity, but spiritual bliss and peace of mind will unite mankind. Man is man's best friend and man is man's worst enemy.

In this ancient city of spiritual unfoldment of man through our Lord, Jesus Christ, I would, if I may, like to end this paper by a quotation from the work of that man who is neither unknown to the men of science or to the men of religion. His message has faith for man and society:

'Mankind is visibly passing through a crisis of growth. Mankind is becoming aware of its shortcomings and its capacities.... It sees the Universe growing luminous like the horizon just before sunrise. It has a sense of premonition and of expectation.'

Pierre Teilhard de Chardin.

