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VOLUME II

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Varna, September 14-19, 1970

VOLUME II

WORKING GROUPS

GROUPES DE TRAVAIL

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CONTENTS
TABLE DES MATIERES

WORKING GROUPS
GROUPES DE TRAVAIL

I. FUTURE SOCIETIES AND LONG TWRM PLANNING
I. SOCIETES FUTURES ET PLANIFICATION A LONG TERME

II. MODIFICATION OF SOCIAL RELATIONS IN SOCIAL CHANGE
II. MODIFICATIONS DES RELATIONSSOCIA LES DANS LE CHANGEMENT SOCIAL

III. MATHEMATICAL MODELS AND METHODS IN SOCIAL PREDICTION
III. MODELES MATHEMATIQUES ET METHODES DE PREVISION SOCIALE

IV. POWER AND THE PUBLIC
IV. POUVOIR ET PUBLIC

V. COMPARATIVE ANALYSIS OF PLANNING IN DIFFERENT TYPES OF SOCIETY
V. ANALYSE COMPARATIVE DE LA PLANIFICATION DANS DIFFERENTS TYPES DE SOCIETES

VI. MODERNIZATION AND DIFFUSION OF INNOVATIONS
VI. MODERNISATION ET DIFFUSION DES INNOVATIONS

The Seventh World Congress of Sociology was organized by the International Sociological Association in cooperation with the Bulgarian Organizing Committee, under the sponsorship of UNESCO and under the high patronage of the President of the Council of Ministers of the People's Republic of Bulgaria Mr. Todor Zhivkov.

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PREFACE

This volume contains the papers presented at the 1st—6th Working Groups of the Seventh World Congress of Sociology (Varna), September 14-19, 1970), whose main theme was "Contemporary and Future Societies — Prediction and Social Planning".

The selection and arrangement of the papers has been done according to the recommendations of the Responsibles of the respective Working Groups.

The authors bear full responsibility for the texts they have presented.

The publication of this volume of the Transactions of the Seventh World Congress of Sociology, as well as that of the other volumes is effected by the Bulgarian Organizing Committee.

AVANT-PROPOS

Le présent volume contient les rapports présentés aux 1er—6e Groupes de travail du Septième Congrés Mondial de Sociologie (Varna, 14—19 Septembre 1970) dont le thème principal était le suivant: „Sociétés contemporaines et futures — prévision et planification sociale".

La sélection et l'arrangement des rapports sont faits d'après les propositions des chefs des Groupes de travail correspondants.

Les auteurs des rapports portent entièrement la responsabilité du texte qu'ils ont présenté.

L'édition de ce volume des Actes du Septième Congrès Mondial de Sociologie, ainsi que celle des autres volumes, est organisée par le Comité d'Organisation Bulgare.

WORKING GROUPS
GROUPES DE TRAVAIL

I. FUTURE SOCIETIES AND LONG TERM PLANNING

I. SOCIETES FUTURES ET PLANIFICATION
A LONG TERME

PROGNOSTICATION (FORECASTING) AS A SPECIAL
CATEGORY FOR THE INVESTIGATION OF PROBLEMS
OF THE FUTURE

IGOR V. BESTUZHEV-LADA

USSR

Fourteen types (categories) of approaches towards problems of the future have been historically formed in the world social thought. Theyc an be conditionally divided into three groups: lower (or negative) group, middle (intermediate) group, and higher (positive) group.

The negative group categories embrace the following appɪoaches:

Presentist approach idɛntifies the future with the present, the future is conceived of as being in the main the same as the present.

Agnostic approach assumes in principle the probability of "some other future", but neglects the possibility of having any reliable image of it.

Nihilistic (finalistic) approach lies in the belief that there shall not be any "other future", that the mankind is doomed to perishing and non-existence.

The intermediate group categories embrace the following approaches:

Religious (providentialist) approach lies in the belief that the future is determined by supernatural forces or by Providence, that it can be learned by way of fortune-telling or revelations which bless the prophets, that it can be influenced upon by magic.

Fantastic (fiction) approach is an arbitrary, mainly artistic presentation of the future (not necessarily connected with religion), of a very broad range beginning from folk tales and up to modern fiction stories (science fiction being excluded).

Utopian approach is an arbitrary, though not directly connected with providentialism, image of some desirable future which seems subjectively to be scientific, i. e., based on knowledge rather than on faith, but objectively it is groundless in terms of the scientific conception of the regularities of natural and social development; hence, it is unattainable.

The other pole of the same approach is an image of the undesirable future (i. e., Anti-Utopian approach).

The positive group is constituted of the following categories:

Intuitive approach, i. e., the anticipation of the future on the basis of subconscious experience which enables one to make more or less true guesses.

Philosophic approach is a prevision of the future as another stage of development of nature and society, within the framework of the known regularities of this development. The philosophy of dialectical and historical materialism conceives

of progressive development as of the one from the simple to the complex, as of dialectical development "in spiral". This philosophy is the basis for the theory of scientific communism, and as such it opposes idealistic and vulgar-materialistic conceptions which were built up long ago (e. g., conceptions of mankind regression, of cyclic development, as well as those of non-dialectically, metaphysically understood progress).

Prognostical (forecasting) approach implies systematic investigation of concrete possibilities of development of this or that process or phenomenon, on the basis of already known concrete regularities of natural and social development. In fact, this approach is a concrete elaboration of the philosophical one, though, due to the concrete nature of the former, they differ essentially. It is but natural that the forecasting approach being based on the philosophy of dialectical and historical materialism and organically related to the theory of scientific communism, opposes the approaches similar to it but based on idealistic and metaphysical philosophic conceptions.

Planning, programming, designing, decisional approaches (which can be grouped in a sub-group of constructive approaches due to the specificity of their nature) imply active influence upon the future via planning, programming, designing the control over processes and phenomena in general. The decisional approach here is a special, so to say, integrating one, since decisions in the control of social processes and phenomena are the final forms of detailing plans, programmes and designs. The designs, in turn, are treated in this respect as forms of programme detailing, and the latter — as forms of plan detailing. It should be pointed out that Marxism-Leninism distinguishes by the revolutionary, planning approach towards problems of the future, and that due to this fact socialist planning differs qualitatively and principally from socio-economic planning (programming) under capitalism. This difference lies both in the class nature, socio-economic content and political orientation, and in the methods, forms and organisation of planning.

Science Fiction approach is an artistic comprehension of the future in literature and art. Unlike "pure" fiction, it is based on the information obtained by other positive approaches.

All these types of approaches to problems of the future appeared at different stages of social thought development. Evidently, the first one to appear was the presentist approach typical of primordial thought. The agnostic approach requires a higher level of social thought capable of rising to the discussion of the possibilities of "some other future" prevision. The nihilistic approach is related to the assumption of the possibility of radically new state of things, namely, of the perishing of the Earth and the mankind; it raises up a question of their origin; hence, it requires an even higher level of social thought. The fantastic and the religious approaches ought to have appeared more or less simultaneously with the previous two, since their formation demands for a comparatively high level of folk-lore and mythology development. The fantastic and religious approaches were considerably evolved during the Antique Epoch when they were ajoined with the philosophical and Utopian approaches. The religious approach dominated the Middle Ages, while the New Ages evince the triumph of the Utopian one, which left the religious approach behind. With the dispersion of Marxism in the second half of the XIXth century the Utopian approach was, in turn, pressed back by the philosophic one, the latter being radically changed due to the appearance of the dialectical and ma-

terialistic conception of the socio-technological progress, due to the appearance
of the scientific theory of revolutionary replacement of socio-economic formations.
Later on the theory and practice of socio-economic planning in the Soviet Union
have stimulated the development of the constructive approaches and the forecast-
ing one which is closely connected with the former. These approaches have been
especially elaborated under the modern scientific and technological revolution.

Actually, all these types of approaches can hardly be met in their "pure" form.
As a rule, various conceptions of the future to be found in world social thought,
consist of complicated interlacings of various elements pertaining to a number of
types of the approaches. But to analyse concrete concepts of the future we need
precise differentiation of these main types.

The analysis of categories of approaches to problems of the future in their
historical development leads us to the following conclusions:

1. There is no reason to speak of the formation within the last decades (i. e.,
under the scientific and technological revolution) of an allegedly new "science of
the future", as some Western futurologists and journalists do. The history of scien-
tific prevision was started by the works of K. Marx and F. Engels more than a cen-
tury ago. Later on, it was proceeded by V. Lenin. Its essence lies in the struggle
between the truly scientific dialectical and materialistic approach, and various appro-
aches typical for the pre-history of the scientific prevision — presentist, agnostic,
religious, and especially Utopian and metaphysico-idealistic. In 1917 a new period
of this history began. It was started by the theory and practice of socio-economic
planning in the Soviet Union and by the elaboration of constructive and forecast-
ing approaches as forms of detailing the philosophic one. The content and nature
of these approaches under socialism, on the basis of Marxism-Leninism were ra-
dically different from non-Marxist conceptions existing under capitalism. The late
forties started the next stage characterized by rapid universal development of the
constructive and forecasting approaches within the framework of the scientific
and technological revolution. The present, new stage of scientific prevision has
commenced with the beginning of the sixties — "forecast boom", avalanche-like
growth of specialized scientific bodies to elaborate forecasts, plans, programmes
etc. This is but a new *stage* in the history of an important scientific branch —
and not the birth of a new science. At this stage, as well as at all previous ones, cru-
cial differences in the approaches towards the problems of the future — those bas-
ed on Marxism-Leninism under socialism, and those based on non-Marxist con-
ceptions under capitalism — have been evident.

2. Forecasting (prognostication) as a category of the approach towards the
problems of the future is a form of detailing the scientific prevision (of detailing
the philosophic approach). In principle it does not differ from all other forms of
detailing, e. g., from planning, programming, designing, though the specificity of
the former is obvious. The forecasting approach, unlike the constructive ones, does
not imply active influence upon the future, or any solutions of its problems. In turn,
the forecasting approach permits us to discover the whole range of possible vari-
ants of development or of solutions of the problems of the future, including mu-
tually exclusive variants. This is far beyond the capabilities of any of the construct-
ive approaches. Hence, this makes the forecasting approach indispensable for im-
proving scientific reliability, objectivity and, consequently, efficiency of the con-
structive approaches. Forecasts can and should always accompany the elabora-

tion of plans, programmes, designs, decisions specifying the initial situation and possibilities, as well as the accomplishment and, above all, the effects of the accomplishment (or of the failure to accomplish) the latter. Magnificent economic and socio-political results of such a combination have been shown up by practice. Forecasting has become an organic integral part of socialist planning. (The latter by no means excludes independant significance of forecasts for constructing conceptions of the future.)

3. Forecasting (prognostication) per se — as any other approach towards problems of the future — cannot serve as a subject of a special science, since it represents an immanent function of any of the existing sciences. Though the prognostic function exhibits itself in every science in different ways (in mathematics these ways differ from those in philosophy, in sociology — from those in physics, etc.), it does exhibit itself, or otherwise a science becomes senseless. Thus, forecasts of the development of science are an organic integral part of scientology, forecasts in technology — of technical sciences, in economy — of economical sciences, in social relations — of sociology, etc. Obviously, all social forecasts form an intricate complex, since in reality they are maintained as task groups in which some forecasts are the main ones, and others are auxiliary, interpretatory ones (e. g., in the task group of forecast pertaining to national economy the leading role is played by economic forecasts, whereas scientific, technological, demographic, sociological, etc. forecasts are the auxiliary ones). This is but natural, because not a single social forecast can be efficient unless the data on (if possible all) the adjacent forecasts are controlled. This gives us every reason to state that it is not a new science, but a complex of social prognostication, an extremely rapidly developing trend in research of every science, an impetuously progressing branch of every modern science in general. Nevertheless, since the laws and methods of forecasting in various sciences have much in common, an issue arises concerning a new scientific discipline. But the subject of this new discipline is not the future itself, but the laws and methods of its forecasting. This new discipline is prognostics (forecasts), social prognostics being one of its branches. It is being formed now alongside with the development of a special theory of prognostication.

4. The complex of social forecasting is a main trend of social research. Its specific subject is the development of concrete social processes. In broad sense it embraces all processes *directly* related to the activity of human society (this is where it differs from natural, biological, technical, etc. processes of spontaneous character — e. g., forecasts of weather, crops, earthquakes, diseases, etc.). It involves the developments of social aspects of science, technology, economy, social relations, demographic and ethnic processes, health service, sports, education, town building, arts, state and law, home and foreign policy, foreign relations, military field, mastering the Earth and Cosmic space.

In narrow sense social forecasting is usually identified with the sociological one, i. e., with the investigation of the effects and possibilities of development of social relations proper. A special group is formed within this complex by philosophical and methodological problems of prognostics — gnosiology and logic of scientific prevision, laws and methods of forecast elaboration. As a trend in social research, social prognostication carries all typical features of the former (from the problems to the methods). But enjoying the specificity of its subject, the latter enjoys its own specific features as well. Social prognostication widely resorts to

the methods of questionnairing (inquest of the population and experts), of mathematical statistics, of simulation. An important role is played here by the systems analysis, etc. Specific features of the given trend are mainly rooted in the stochastic nature of the object under investigation. That is why forecasting nowadays consists, most often, of the elaboration of a possibility scale and of consequent construction of the function of probabilities distribution (less probable — more probable) on the basis of tendencies discovered by search forecasts, or consequent construction of the evaluative function (less desirable — more desirable) on the basis of certain social ideals, needs, norms, etc. (normative forecasts).

5. Social prognostication permits to considerably increase scientific claims to the principles of formation of concrete conceptions of the future. It gives the opportunity to elaborate the typology of these conceptions along the most important criteria, e. g., the criterium of principle content — the main criterium of the evaluation of every social conception of the future (religious, Utopian, philosophical historical conceptions, contemporary non-Marxist conceptions, Marxist conception). Within the framework of this main criterium it is possible to construct typological rows along the criteria of the analytical nature (conceptions of possibilities, of utmost probability, desirability), of the temporal nature (conceptions of the near, short-range, and long-range future), of the scale nature (conceptions of smaller, medium and larger systems). In these terms the form of any social conception of the concrete future is perceived as logical integration of a certain type corresponding to the criteria of every of the above mentioned rows. This facilitates the task of distinguishing between social conceptions of the concrete future along their contents and form, as well as the task of determining the degree of scientific reliability of every such conception.

<center>*</center>

Research work in social prognostication has already yielded the knowledge of some important features of our tomorrow's world. Now we know with quite a considerable ratio of probability that in 2000 there will be approximately twice as many people on our Earth as in mid-sixties, that these people will produce and consume approximately five times more energy, that Gross National Product per capita of population will increase all over the world by average 2.5 or 3 times. With the same ratio of probability we can make quite a number of definite statements concerning the near developments in industry and agriculture, in transport and communication, in town building and Space conquering. But the most important thing here is that we know now what a magnificent future is being opened for the mankind by the scientific and technological revolution, and what social prerequisites are necessary to make this future real. The Marxists are positive that these prerequisites inevitably stem from socialism. But we know as well the danger involved for the mankind in arms race, in misanthropic policies of monopolies, in neocolonialism, even in the scientific and technological progress itself under capitalism. That is why we, the Marxists, are sure that the future society will be the communist society. To dream about the bright future is not enough. It is necessary to investigate the ways to it and struggle for it.

Progressive sociologists of the world can and should make their contribution in these investigations, as well as in this struggle. The agenda of the VII World Con-

gress of Sociology includes the issues of social prognostication, planning and control over social processes. The discussion of these issues will undoubtedly promote further development of research in these important spheres of modern sociological science. In order to make the research in social prognostication more systematic and to engage it more tightly with the issues of other fields of modern sociology I propose to address the Presidium of the International Sociological Association on behalf of our working group with the request to organize within the Association a Research Committee for Social Prognostication. Such Committees do already exist in a number of national associations. Thus, e. g. the Institute for Social Prognostication has been formed at the Soviet Sociological Association; this Institute functions in close cooperation with other Research Committees of the Association. The organization of such a research committee within the framework of the ISA will help to stimulate and coordinate research in this sphere.

One more proposal. Issues of social effects of the contemporary scientific and technological revolution, both the observed and the forecasted ones, are gaining for sociology more and more importance. There are many reasons to believe that in the coming years these issues will become socially even more important. A number of sociologists and research groups in the world have carried out (or are carrying out now) interesting investigations in this field. But the scale and level of such investigations are far from being equal to the social significance of the issues researched. In order to stimulate efforts in this field I would ask the members of our Working Group to support the proposal to include in the agenda of the next World Congress of Sociology, together with other issues, the issue of social effects of the contemporary scientific and technological revolution. This problem is related to all Research Committees of the ISA without a single exception; its discussion will considerably broaden the range of scientists cooperating with the ISA.

POSSIBILITIES AND LIMITS IN SOCIOLOGICAL FORECASTING

DONALD G. MACRAE

ENGLAND

Like everyone else social scientists are involved in a specific set of ways of conceiving the world and expressing their experience of it. I do not mean by this merely that every social scientist has undergone a particular professional deformation in becoming a social scientist, nor that each social scientist is to some degrees fixed in his perspectives by his or her generational, class, sex and other experiences. These things are no doubt true enough, but I mean something more general. All of us are part of a system of categorising the experienced world in such modes as space, time present, time past and time future, causality, the individual, the social, which is essentially the social and historic product of European society. An African sociologist, or a Japanese, of course will employ these and other categories with a particular and largely unconscious cultural style. Yet he cannot escape the fact that as *social scientist* he is caught up in a *Weltanschauung* — and it is deeper even than that — which is essentially European.

This means that he conceives of time — the framework of forecasting — in the familiar division of past, present and future. To him the past, however, open to re-interpretation, is the category of the fixed and concrete. The present is the time of action, decision, judgement and choice. The future is the time of the probable and possible, the fluid, the uncertain, the hopeful, the threatening, the random, the unrealised. I do not claim that these categories are consistent: merely that they are there, our classificatory ordering of the temporal. Indeed there is another inconsistency: time as flow and continuity, and time as disjunction and novelty. No doubt there are others. Certainly other cultural traditions have categorised and ordered time very differently as ethnographic and comparative studies reveal. But as social scientists this is where we are, with what we are stuck.

Forecasting and all other futurological enterprises are attempts in a very old tradition to master the future as the random, fluid and unknown, and to fix it so that we may choose, avoid and enjoy the better. It is yet another quest for certainty in an uncertain and frightening world. Only for divination and prophecy we attempt to substitute social science. How far can we hope to do so, for what purposes, and under what limitations?

Certain negative certainties are immediately available. For example, given certain restraints on immigration and emigration, the number of people aged twenty in Britain in 1984 cannot be greater, and indeed, must be less than the number

of six year old children in 1970. Similarly, given the facts of physiology and no major use of drugs that induce multiple births, the possible number of children in the next x years is limited by the number of women and girls who will then be of child-bearing age. And so on: such things may appear trivial, but getting them right, and we can establish quite a number of parameters and sophistications, is not trivial for educational and economic purposes, nor for assessments of the potential quality of life.

Even such negative certainties are subject, of course and as said, to continuing social restraints and probabilities. In fact they are not quite certainties, but such high probabilities that it is reasonable to treat them as such. Yet even in the field of demography, in appearance the most rigorous, quantitative and assured of the sociological disciplines, the record of forecasting is odd. Since Malthus in 1798 this discipline has always made forecasts. With astonishing regularity they have always been wrong and sometimes very seriously wrong. We are faced by three things here: the limits of extrapolation, the constraints of the quantitative and the nature of prophecy. Let us take these in order.

I

Extrapolation involves the idea of the continuity of trends. But social trajectories are not real things like ballistic trajectories. They do not possess actual inertias and velocities, etc. They are imputations. They are under the threat of all *post hoc, ergo propter hoc* reasoning. Such reasoning is unavoidable, can be made to some degree rigorous and sophisticated, but is always dubious. We may say, with the Germans, that trees never grow up to the sky. All we are entitled to say is that no tree has yet managed to do so.

II

All quantitative work in all the social sciences is subject to three major constraints. Much sociology involves further constraints. The first of these is to be found in asking the question, are the figures true? Far too readily do people accept the veridicity of quantitative statements. I do not mean by this that the figures are falsified consciously, though of course they often are. Nor do I mean that the calculations from which figures are derived are erroneous, for this is seldom the case. Rather do I mean that the figures are bad at base even when sampling does not add its own dangers. Anyone who has collected numerical data knows this to be the case. Even the enormous resources of the US census, for example, we know gives an underestimate of the total population — but by what margin? And one could write books on the limitations of all our numerical data as against the realities we attempt to quantify. This is not to argue against more (and better) social statistics. I want them, but I also want scepticism about them. But, secondly, even if the figures are good, are they the right ones for the purposes of forecasting? The factors here are that many of our figures are collected for past not present purposes; for reasons of record and administration, not research and forecast, and that they are divorced from our theoretical understanding of economy and society. This leads to the last point on the shaky nature of quantitative procedures in our enterprise. Suppose that our figures are in fact both good and suitable, are they

yet in their relations truly and usefully to be mathematically related? Of course the answer is quite often affirmative, but it seems to me an act of faith, often a very implausible one, to assume that is always the case. To go further, I believe that our quantitative techniques when combined in a mathematical analysis often do serious violence to present reality and the assessment of the future. Many real social relations are probably not mathematically expressible. Many others are excluded from consideration in this mode of research. I suggest certain alternatives and procedures when I talk later of structural and cultural analyses and forecasting.

Now none of this is to be understood as an attempt to purge sociology (or futurology) of quantity and mathematics. For short-term forecasting in specific areas these are very often the best, simplest and only techniques. When they have appeared to be discredited, as for example in the electoral forecasting this year carried out in Britain and Chile, something else has been at work, which all forecasting should bear in mind, and which is relevant to what I later say about culture. We do not know or understand at all clearly the relation of attitudes to action — even to an act so intrinsically simple as voting. Attitudes are, certainly, social facts, but their status in connection to actors and their roles in social institutions is very little understood. It demands, no doubt, research. Even more, it demands more thought and better theory. Until we understand better, both social and economic forecasting will be astray.*

III

Everyone is familiar with the paradoxes of prophecy. They are to be found in the drama of the Oedipus story as much as in the writings of sociologists. If we know the future then we can often evade it: what then was the nature of our knowledge? If I know that I shall be killed tomorrow in a car, then tomorrow I will keep out of cars: and so, less surely, for society, politics and economics. On the other hand, if I believe that tomorrow it is inevitable that something will happen which I desire, then the prediction may well be "self-fulfilling" in that I shall act towards that end. The forecast itself becomes a social fact *in the present, in the time of choice*. Such situations seem particularly frequent in the spheres of political and administrative action. Once again one must face the question, what is the nature and status of forecasts as knowledge?

But if there are these limitations and difficulties there are also potentialities, possibilities and opportunities as well as other limitations and objections. An area of much attention and also of serious difficulty is technology. The given state of technology is at any moment one of the parameters of social action. On this we can all agree, but we may not agree on the relation of technology to society nor on the effects of technological change not just on society but on the argument that forecasting is, *a priori*, a sensible activity in itself.

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* I would not wish these remarks to be understood as applying merely to political, let alone electoral issues. They apply everywhere, for attitudes are everywhere. Reproductive behaviour and attitudes might be a good area for renewed study and thought.

The common view, I suppose, is that technology is in industrial societies at least best taken as an almost independent variable, changes in which produce changes of an unforeseen kind in social structure. Thus the internal combustion engine, the car and the aeroplane have altered both urban and rural structures, national and international politics — from road lobbies to oil politics — family relations, generational relations, and so on. This is all banal. So is the vision of the late twentieth century screaming into some abyss of, at once, over-technology, resource depletion and over-population. Yet I would be prepared to argue another case: the case that technology is the response to social change and demand. Surely neither view is correct, both are partly true, and each is too simple. We need historical and comparative studies and a clear theory: even then our forecasting will be under the *post hoc, ergo propter hoc* ban. Further we need a theory of natural science as an ongoing, quasi-autonomous social institution and of the actual relation of science, largely autonomous, to the much less autonomous and economically dominated technological arts.

And it has been objected to all forecasting that it contains a fundamental error. As we cannot know tomorrow's technology today — otherwise it would be today's technology — then we cannot know tomorrow's society. There is something in this: in the long-run perhaps everything. In the short-run it is not very interesting for, first, new technology takes time to be introduced and then to have effect, and, second, twentieth century man has been very good at predicting the shapes of tomorrow's technologies even before they existed. Indeed the principle errors about technological forecasting have been of one kind. Such forecasting has been very accurate, but it has nearly always involved an under-estimation of the time factor. Changes have been foreseen accurately enough, but the speed with which these technical innovations arrive has been faster than the prophets dared to dream. With the increased scale of research operations and the growth of scientific and technical communication I would suggest that technological forecasting is one of the most fruitful forms of futurology in which we might invest. There are, in the short run, many and firm parameters available, and of these many are scientific but even more are economic and social. But about the impacts and feedbacks from technological innovation and change we need, as I said, better general sociology.

One of the postulates of nearly all general sociologies, sometimes overt, more usually tacit, is that of equilibrium. Different sorts of equilibria, some analogous to those of mechanics and economics and other closer to the homeostasis of biology, are involved here. All have in common ideas of continuity, interconnectivity of parts and feedback mechanisms, either negative or positive. (To all of them a cybernetic vocabulary can be attached.) If such equilibria are real features of social structure — nearly all general sociology is about social structure — then forecasting ought to have a sound and central base. Although I am strongly in favour of general and theoretical sociology I would suggest that it is, as here, too simple. Partial equilibrium analyses, where appropriate are in order: general equilibrium not so. Social reality in its structural aspects is not I think continuous, consistent, entirely inter-connected, nor usual equilibrating. (Indeed, given our tripartite classification of the temporal how could it be?)

This means that structural analysis is very difficult, yet in it is the best hope for serious sociological forecasting in the present state of knowledge and under-

standing. Such an analysis cannot be decently expounded here, for it would take too long. Nor is it easy to give good exemplars either in the form oft heoretical and methodological expositions, or in the form of actual applications to specific societies and situations. Furthermore good structural analysis is often tacit, a not undeliberate but not fully conscious either and thus hard to grasp. (Excellent prophets like Tocqueville and Burckhardt are, in part, illustrations of my point.) It is an odd, and not creditable, fact that the literature of sociology should on these matters be so inferior to the oral tradition and practice of the discipline.

If one examines this tradition one finds five elements at the least and a complex frame of inter-relationships. These elements are (1) the institutionalisation of communication, (2) the institutionalisation of socialisation and kinship, (3) the institutionalisation of production and allocation, (4) the institutionalisation of behavioural control, and (5) the institutionalisation of ritual relations between men and between man and nature. This list is of course not comprehensive or necessarily comprehensive. A minimum inter-relationship is that of role-allocation (and hence of status). There are many others. The institutions of a structure are never mono-functional. The relations of each area with others are not symmetrical. And so on... What is important is that some analytical separation is possible, relative autonomies exist and in consequence short-term forecasting can often concentrate on any one of these areas without absurdity. But serious middle-run and long-run (if ever possible) forecasting cannot realistically be so self-denying but must attempt to be inclusive.

Three points are, perhaps, of special interest. One of these leads us to one of the major difficulties of all forecasting. It is very obvious, but, alas, people involved in the technical business of making specific forecasts often forget it. It is obvious that not merely is much social change the resultant of the confluence of trends and/or policies in two or more societies, but that in every society, every social structure, disjunctions, divergences and convergences, conflicts and relations of semiautonomous action produce change and that, of course, the consequences in the future of such factors are nearly always unforseenable n nature and always, I am afraid, in magnitude. I see no reason, however, to assume that this must remain the case

Secondly, I would suggest that the sociology of socialisation demands special study. If each generation acquires a sociologically and historically specific socialisation and if this, however modified, survives throughout the life-span of a particular generational whort as an active frame of social behaviour our problems are thereby limited, for some parameters are thereby fixed. Furthermore if there are radical disjunctions in socialisation in a society over time, then these are likely to be mirrored in generational conflict and also to result in the establishment of new modulities of social action. Thus in 1958 I was able to forecast something of the revolt of youth in the 1960's, though not its magnitide.

This leads us, thirdly, to a point beyond questions of structure. I refer to culture in the wide sense in which the word is used in anthropology. The sociology of culture is fragmentary and thin. Yet in communication, socialisation and ritual we cannot be content with a merely institutional analysis. (I believe this indeed to be universally true of all the elements I noted.) It may be, I think it likely, that in culture and the formation of specific modes of consciousness we will find the explanation of the most significant forms of change and the central problems of fore-

casting for both the sociologist and the politician, though not usually for the administrator. Unfortunately theory here is romantic, impressionistic and unattractive: the work of marginal and often nasty men. They tend, like a Danilevsky or a Spengler, to be possessed of organic analogies, doom-haunted, apocalyptic. They lack not just rigour, but common sense. Language and communication are, however, becoming better understood and ambitious young sociologists may find in, for example, socio-linguistics keys to some of the locks which we must open for an inderstanding of the cultural in the social. That, however, is to make a forecast.

And today forecasting must be prepared to look even more widely. Beyond the social and the economic and political is the fact that our busy, numerous, increasing species is affecting the total surface of the earth, its seas and air. As we increasingly affect the environment so we must try to see how it will affect us. The problems here, thankfully, involve many disciplines other than sociology.

In all this I have tried to look at social composition, where our studies can be largely if modestly quantitative, then at social structure where our techniques must predominantly be classificatory, comparative, historical but yet rigorous, and last at culture where our ignorance is greatest. I am not sanguine except about fairly short-run and specific forecasting, but the challenge is immense and we will not do even middle-range work well if we do not attempt (and find again and again) some larger perspectives and central issues. Sociology has achieved much: in doing so it is learning how much there is to be achieved. The endeavour to predict, to make bets above the level of mere chance, about the future seems to me socially important and fruitful for the discipline. Already we know a great deal about what is not likely to happen. Soon perhaps we will catch up with and be more fruitful than the writers of utopias and scientific romances of great issues. On some small matters we can already be confident of our techniques of investigation and prophecy.

PROJECTING CHANGES IN STYLE OF LIFE IN SOCIALIST POLAND ON THE BACKGROUND OF HYPOTHESES OF CHANGES IN THE SOCIAL STRUCTURE

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POLAND

1. Dynamics of transformations in the social structure in Poland

The social structure in Poland changed substantially at the course of the last 30 years. We can differentiate here basic changes of a "leapy", revolutionary character which took place in the first period of organizing the statehood of People's Poland, and the variations of a continuous character, evolutionary, occurring up to present days (with certain changing tendencies and changing speed).

In the first period the economic and social system was transformed by the agricultural reform and the nationalization of big and middle industry, which action brought up liquidation of the class of landowners and bourgeoisie and changed the status of other social classes.

An essential element of the change of social structure in our country was its transformation into the state of one nationality, in contrast to the period of time before the Second World War when minorities amounted to $1/_3$ of the population of Poland.

In the second period, that of evolution in the social structure, transformations occurred, above all, as results of the operation of the following factors: urbanization, industrialization, spatial mobility, increase of education, social mobility. These processes had resulted in three ways. They caused: 1) quantitative changes of some proportions within the social structure as a whole; 2) changes within particular classes; 3) reduction of social differences among classes and strata.

They all brought up the division of Polish socialist society into four principal classes and strata: workers, "intelligentsia", peasants and petty-bourgeoisie. These classes and strata are not disposed one in respect to another to such a degree as they were in pre-war Poland, in the hierarchic manner (vertical), but rather as elements differentiated in a horizontal way (because of their functions in the system of national economy).

In the perspective of the next 30 years we expect that our social structure will be shaped, above all, by the following factors.

We should expect further *socialization* of our economy, though its rate is hard to be strictly defined. We understand here mainly contracting the class of individual farmers, as the result of moving of some people (especially the young generation) into urban occupations and lessening manpower in effect of mechanization.

Despite of these processes it should be expected that we shall still possess in 2000 a class, though not so numerous, of individual farmers.

The *urbanization* of the country — in the perspective of the next 30 years — will attain, as it can be expected, dimensions large enough to encounter Poland to the highly urbanized countries. We expect that until 2000 the amount of rural population will lessen to 18—15%. This process will decrease most of the present differences between life in the cities and in the country in double sense: it will increase the percentage of the population living in similar urban environment and make the village inhabitants to take advantage of urban facilities and institutions. Moreover, considering the expected growth of large cities and great agglomerations, the possibility exists to observe in Poland of the future an increase of the attractiveness of life in the country, especially in suburban regions.

It is to be expected that in our society, as in other industrialized societies (we believe that this process is not a feature of capitalist system) the great increase of the sector of services will occur in the national economy, as well as further growth of the sector of goods productions, and, instead, possible lessening of the importance of the raw materials production.

These factors can lead to further social differentiation depending on the sector of national economy as well as on particular branches or other kinds of division. The quantitative increase and the growth of social importance of the third sector (services) may cause the modification or decrease of the role of patterns connected with the organization of industrial type.

The essential factor which differentiated our society in the past and does it presently are the differences in the level of education. In the perspective of 2000 we expect that most people in Poland will obtain secondary education (omitting details as what this term would mean in 2000), a high per cent of the population will acquire university education and smaller per cent will have less than secondary education.

If the two above dimensions of social differentiation — income and education — shape in agreement with our expectations, and the increase of the degree of congruence of status factors really occurs, covering both education and income, as well as social prestige (and also if some of our other assumptions are correct), *we shall be in 2000, in general, a society characterized by educated and highly qualified population working in modernised industry and services, society of an evidently egalitarian character.* Yet we realize that it is not the only possible effect of social development as analysed from the point of view of today's tendencies. There are other factors which can exert differentiating influence, namely: peculiar hierarchy of merits, giving a higher prestige and higher income to the outstanding specialists, innovators, super-quota workers, etc. (the importance of this factor can grow up in connection with the present transformation of our economy into one of intensified type); the scientific and technological revolution can promote outstanding individuals and teams, having greater achievements in such domains as science, technics; further and even stronger hierarchy of economic importance of certain branches and certain occupations can occur, followed by differentiation of some — at least — dimensions of social differentiation. And, at last, the factor of strong social differentiation will still be the division into urban and rural population if the modernization of agriculture and the increase of the education level of the peasant population will not come quickly enough.

Changes in the system of management, administration and political democratization will be the next factors deciding the character of social structure.

However, prognoses in the field of transformation of management and political culture are especially difficult. In any case, the factors must be taken under consideration, which could constitute a basis for creating certain hierarchies in the future society: functioning of the apparatus of planning, decision-making and administering; hierarchy of political institutions; administration hierarchy at various levels and institutions.

Next to the mentioned above factors of social changes we can expect: growth of the general level of welfare; growth of educational level; access to the social life of the new generations grown up in fast changing conditions of life; international situation. They all will be followed by further progress in the direction of transforming social macrostructure from vertical variation into a horizontal one.

The last factor hypothetically distinguished as the possible source of changes in the social structure is the future development in the process of cultural integration of our society. This integration will occur — if our prognosis is right — around a certain "medium": average degree of welfare, most part of society at medium educational level, differentiated in quite a small degree into actual four social classes, but more dependent on qualifications and on the kind of work performed in different branches of national economy, participation in decision-making process (political and economic).

2. Dynamics of transformations of style of life in Poland

Spatial and *social mobility* which occurred in Poland after the Second World War; catastrophic general impoverishment of the country as a result of war; liquidation of two economically leading social classes; egalitarian ideas and social and economic policy of the new regime — all these factors caused basic modifications or even breakdown of the former style of life in all social classes. For the workers' and peasants' classes — as a whole — the possibilities of advancement and forming a new style of life appeared, though for some strata within those classes (namely workers' and peasants' "aristocracy") the changes introduced meant the loss of the privileged position. For the "intelligentsia" — wasted in number during the war — new conditions brought destruction of the former position and former style of life and resulted in the need of a full change of style of life in almost all its aspects.

Transformations of *social structure* meant the ruin of the former style of life. As it is known, in situations of such type the breakup of the existing structures and social bonds goes usually with the breakup of social norms and patterns. New social structures, during their setting and consolidating, favor creating new norm and patterns, it is, however, the time consuming process. In Poland this process is far from ending which is quite comprehensible: firstly, in the period of breakup of the former social structure and, linked to it, the criteria of "superiority" and "inferiority", new criteria of evaluating shaped already, they are, however, neither univocal nor fully apprehended by the general public. Secondly, the social mobility is still considerable in our society and the process of spatial mobility — from the country to the cities — is still actual, which phenomenon creates new and new situations of clashing of different styles of life and their different evaluations. Thirdly,

changes of the style of life of individuals continue to occur, as well as of small groups, classes or strata, connected with other mentioned above factors.

The urbanization brings to a more and more numerous part of the population the opportunity to convert into the "urban" style of life, differing from the "rural" one both in consequence of taking advantage of urban facilities and in the organization of living, types of bonds, etc.

The industrialization, or more generally, the development of civilization and technology, is followed by "modernization" of the style of life of people working in modernizing industry, people becoming more and more aquainted with the new technology and modern industrial organization of work.

Growth of the *standard of living* creates greater possibilities of selection in the scope of various aspects of style of life: way of spending money destinated for the consumption of goods of material and immaterial character, types of activities in leisure time, etc. More and more expenditures (purchase of goods, acquiring various services) depend on likings and are not univocally determined.

The increase of the *education* level enhances the perception of those possibilities that are connected with the growing standard of living, as well as a demand for activities of a more intellectual and esthetic character. At the same time the increase of education helps to awake new aspirations, new needs.

Apart from the above factors one more fact is to be noticed in the contemporary world: more and more important role is played by the influence of cultural patterns transcending borders of particular countries. Hence, the styles of life shaped elsewhere affect the aspirations and behaviour of the Polish society — and this occurs within all social classes, though, probably, not in the same degree.

In general, there exists a tendency to *uniformisation* of styles of life still different in particular classes and strata. The principal cause of this phenomenon is the fact that those factors, which we pointed out as style-creating, are universal and in our country they do not confine themselves to particular classes and strata or to particular regions of the country.

Tendencies of the present transformations can be characterized — in general— in such a way: contemporary changes lead to lessening the differences between the style of life of particular social classes and strata, on the one side, and, on the other, to increasing the individualization of this style, to increasing the differences between individuals belonging to the same class of stratum. We expect then the lessening of the role of social stratification (above all the role of economic differences) as a factor differentiating our society. The above statement is, however, more a hypothesis than a conclusion, which should be strengthened with results of research.

3. Possible modifications of the style of life in the next 30 years

It is our hypothesis that the shape of future style of life in our country will depend on the following factors:

— future social structure;

— growth of the average standard of living;

— differentiation of standards of living among classes, strata, social categories;

— relation of the collective consumption to the individual one;

— people's participation in the social and political life, degree of democratization;

— future international context;

.   — changes in social consciousness;

— transformations of "natural" environment, of infrastructure, of development of technology.

Which role will be played by the above factors and what effects of their influence seem to be most possible? Let us try to answer shortly this question, treating this answer not as a prognosis, but rather as a formulation of problems which are worth a more detailed analysis in the future.

If our prognosis concerning the probability of progress in Poland within the next 30 years, a kind of highly qualified stratum comprising most part of the society, is right, we may expect establishing certain style of life, adequate for this group. What tendencies, regarding the shape of this style are to be expected, we shall discuss below. Here we but remind that, if our formulated above thesis would come true, then changes in style of life will tend to enlarge individual choices and to lessen the role of stratification as a differentiating factor, and if such a regularity will be sustained in future (what seems quite probable), we may expect that the future style of life of the new "white collars" will determine smaller scope of social life than any of the traditional styles of life of former social classes.

Apart from the style of life of the dominating "industry-services" group there exists a possibility of emerging of other styles of life in groups occupying especially privileged position in the social structure. It should also be expected that specifities of the "rural" style of life will still subsist, though the differences between the "urban" and "rural" life will decrease in a high degree.

We may also expect that certain style of the "social margin" will exist as well. As far as we can suppose that in the perspective of 2000 institutions of "social welfare" will develop in our country to the extent which will eliminate fully the poverty and that all invalids (criples, mental patients) will receive state care, yet the possibility of a phenomenon of "misery by choice" cannot be excluded, as well as rejecting material and spiritual values accepted by the rest of the society. General tendencies of differentiation could emerge from the role played by the following factors.

First of them is the problem of consumption. As far as we are able to expect that our society up to 2000 will become an affluent society, still the question of dispersion of this affluence within the population is open. This will depend, as we may suppose, on two factors. The one of them is the range of income of particular groups and individuals and the second the relation between the individual and collective consumption.[1] Plans and prognoses regarding the next question provide that actually existing range of salaries will be sustained in the perspective discussed for the year 2000. Then the egalitarianism of our society, measured with such an indicator, will not decrease. The question of the relation between the individual and collective consumption is less evident — and this factor will play an essential role for the future style and especially for the problem, to which extent the

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[1] The term «collective consumption» could be understood in various ways. Here we mean by it goods and services free of charge.

style could be called "socialist" and favor the crystallization of the socialist consciousness.

The importance of this factor will grow in case of rightfulness of our two prognoses: increase of the level of standard of living and individualization of the style of life. Both will lead to the increase of importance of the "market" — for material and cultural goods — which will let large masses of society be able to select individually their choices.

The essential factor which will decide the future style of life will be the degree of democratization of the system and mainly the engagement of large masses in the process of undertaking economic and political decisions; such an engagement can constitute the counterweight to the "consumptive" tendencies, i. e. to attributing exaggerated importance and prestige to consumption of material goods of any kind.

The importance of the future international context will be the multifold one. First of all it will condition to some extent the development of other processes (among others, the rate of increase of the standard of living). Other question, connected with this context, is the "import" of patterns of styles of life, shaped abroad: what styles will dominate in other countries and also which countries will enjoy less and which more prestige — this would influence the style of life in Poland. And, at last, the role of international context can reveal also in the situation when Poland will place itself in the range of few economically privileged ones in the world of 2000, the sense of internationalism born on the basis of socialist regime can also prevent the consumptive tendencies (in the meaning discussed). Instead, lack of this sense can even strengthen tendencies for the style of life of privileged society.

The shape of future style of life will depend, to a great extent, on the transformations in social consciousness. We have already mentioned its role, considering some previous factors. We must ask ourselves, however, a question: to what degree and in what direction the system of values will change in our society, and especially the sense of egalitarianism, criteria of "superiority" and "inferiority" in the gradation of social prestige, i. e., which was called "democratic ethos". Investigating chances in this field, and the conscious social policy in shaping desirable attitudes and preventing undesirable ones — this will decide, in a considerable degree, the style of life of the Polish society of 2000.

At last, we have mentioned, as of one significant factors of changes in the area of "non-humanistic" environment: such factors as landscape, or "space"; new inventions and technical innovations — especially those concerning communications, means of transport, or application of computers — will certainly exert a great influence on the future style of life.

One more problem arises at last. Our prognoses regard the growing individualization of the style of life which, in our opinion, is being brought and will be brought, in the period discussed, by the economical and cultural development. It does not mean, however, that the only possible result of such tendency is a "lonely crowd". On the contrary — it is possible to anticipate a kind of "plurality in unity" in the future society. Plurality of possible manners, styles of life, satisfying individual psychological (and physiological) dispositions, particular abilities, with the unity secured by the consciousness of common interests and all-national goals.

4. Social policy and the style of life — perspectives for XXIth century

As far as the perspective of further years, those after 2000, is concerned, it is worth to say some words about them not in categories of prognoses or anticipations but of some chances as well as fears. In the system of planned economy any prognosis must be discussed in connection with planning.[2] It should be remembered that most decisions in planning, highly important for shaping chances and choices, which are open in the domain of consumption for the citizen of socialist Poland, are based on a certain constant type of evaluations and create general frames both in regard to dispersion of income as well as in formation of relations between the individual and the collective consumption — which relations define the area for the effects co-shaping transformations of the style of life of particular classes. So, all changes arising in this style depend to a great extent not only on changes of individual attributed (education; professional work) occurring as an effect of technological transformations of production, but also on the type of decisions which organize the way of disposing funds of collective consumption. Prognoses regarding evolution of the style of life within the society in which — for shaping individual chances and features of human media — such an important role is played by decisions regaraing the questions of collective consumption, must take under consideration possible purposes of such types of decisions in future times.

The programme in this sphere provides for a creative continuation of some general principles of social policy, tending to form a system of full satisfaction of some basic needs (health service, full employment policy, educational system, housing).

We do not intend programming here the strategy of social policy for coming years, but stressing its durable importance in actualization of basic values of the socialist society. This importance does not lessen during the period of entering into the phase of mass consumption where we expect to be in last decades of XXth century, and it even acquires new functions. General model of consumption will be then characterized by both the ampler satiation with various goods purchased at the market for one's own money, as well as improvement of quality and reach of existing ones, and also creation of new forms of satisfying essential, individual and social needs with the funds in public management. It is evident that for the most appropriate facing — within the range of economical possibilities of a given collective — the demands of people, both the policy of fixing right qualities and prices of commodities as well as policy deciding on the type and scope of benefits and the use of public funds, have a decisive role. Reciprocal relation of these two parts of consumption belongs to considerations much more detailed than this study. Nevertheless, there is no doubt that one of the essential social functions of "collective consumption" — function of egalitarization — does not diminish its importance, but acquires a greater one, at the course of increase of the role of the market in meeting social demands. When we add here the importance of the other function of collective consumption, which can be named the organization of human

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[2] Another paper for Varna has dealt with this problem, namely: A. Sicinski, Prognoses and Social Planning in the System of Socialist Economy.

environment — it can be stated that approaching decades can bring, with the growing variety and accessibility of commodities, the increasing and various activity of largely comprehended social policy, serving to ideas of justice and quality of collective life.

The above discussion on prognoses regarding transformations of social structure and the style of life lets us state that in case of finding right our previously formulated prevision — in their general scope — Polish society of XXIth century will become an egalitarian, democratic society, differentiated rather in categories of occupation and not in class division, society of people tending to shape individually their destination, and united in the consciousness of common goal, and tasks of social and all-national character, with the sense of international links.

This does not, of course, mean that we intend to draw here a luminous, cloudless perspective. The affluent society does not mean the possibilities of satisfying all needs of all people, for we do not think that all principles of communism will be reached just in 2000. Society of faint class differentiation is not the same as society without any tension of conflict. We have also pointed out that, as the society of "well-fed", we shall find ourselves in the situation where almost $^2/_3$ of the world's population lives in misery or at least in poverty. We wish, however, to close this prognostic remarks with some words on the chances which outline ahead of us, to realize more clearly the purpose of this paper. We do not intend to divine future in the most flawless way, but to point out with the most accuracy what can be done at present and in the near future, and what should be avoided, to reach our real aims in farther future.

EXPERIMENTS WITH A COMPUTER MODEL OF A NATIONAL POLITICAL SYSTEM: SOME BRAZILIAN EXAMPLES*

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This extremely condensed account of work carried out over the last year at the Department of Political Science of the Federal University of Minas Gerais must be seen in the context of related efforts presented by others to this meeting. Specifically, these experiments and the refractions generated in their execution constitute the response of a small group of Brazilian graduate students to the stimulus of a first experience with a prototype model in mid-1969. A full description of a most recent version of that model (MBRSL) has been presented to this meeting by Prof. Carlos Domingo, its originator. An earlier description by Marta Sananes, one of Prof. Domingo's principal collaborators, details the model's content substantially as it was used in Brazil. It should be clear, of course, that it is in the nature of this type of model construction and experimentation that "the model" is continuously in a process of adjustment and reformulation. Core features of structure and inner inter-relationships have, however, been quite stable over this span of the model's evolution.

The mid-1969 meeting referred to above was actually intended to demonstrate before a group of Brazilian social scientists the combined potential of various techniques and tools — recent innovations in modelling, computer capabilities, simulation, gaming, and predictive methodologies. Those sessions were mounted on the supposition that even within the confining environment of an academic meeting, the effective part of the demonstration would not be achieved through formal exposition, as is being attempted here, but through some form of praxis. The idea was to create a reasonably realistic environment in which seasoned so-

cial scientists could carry on or simulate normal work operations (theoretical reflection, data gathering, analysis) with the support of an infra-structure (the model, the computer, the trained judgment of colleagues) not customarily available to them in practically accessible ways.

The attempt to use prototype model as a means of generating projections of middle-run (5-10 years) national futures on the basis of complex scenarios (chains of hypotheses) brought in a dramatic way before participants all the problems of self-definition and communication that bedevil contemporary social science. Not the least of these concerns in the Brazilian case was, obviously, the precarious status of social science inquiry and the vulnerable situation of those social scientists whose professional activity is tolerated, whether or not they have already been formally stripped of political rights. But these political difficulties were seen as part of a larger family of constraints operative as well in many other settings less patently hostile to social science and less risk-laden for individual scholars.

Issues of theory, method, communication within the profession and pedagogical approach were clearly equally at stake. At root the question was whether such models wed to computers and attendant techniques open up new vistas for social science or merely accentuate the disconnection from reality, distance from other modes of knowing the world, and mystification already shrouding the work of many in these disciplines. Can such models accommodate simultaneously the needs and intellectual modes of academics, political activists, ideologues, and concerned citizens? What about the large public broadly responsive to social issues but impatient with complex abstractions or theories of society whether grounded in humanistic values, ideologies, or scientific criteria? Are these new methods inherently disposed to reinforce existing power configurations and therefore inevitably destined to serve status quo politics and the intensification of social controls? Does the social scientist who takes up these esoteric tools merely further cut himself off from the emergent leadership of new social movements, chiefly youth but also others, more keenly attuned to the needs, mood and style of the presently disadvantaged? [1]

The present paper is concerned primarily with the nature of the model used as a tool for research or experimentation. The background of issues delineated above has been provided chiefly to make clear that the intellectual adventure the experiments represent was entered into with a keen awareness of the range of difficulties involved and considerable reservation about the group's capacity to approach solutions. A full biography of the family of models of which MBRSL is a part would require a recapitulation of a complex research experience in Venezuela extending nearly a decade into the past. Two features of that sizeable body of research endeavors are pertinent here. In the first place, taken together, the several studies carried out by CENDES constitute a probably unique instance of research on a national system actually executed on a scale such that many of the fears that lie behind some of the questions raised above become real. Secondly

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[1] On the appearance in the United States of this «para-intellectual» leadership see Martin Kilson, The New Black Intellectuals, Dissent, July-August 1969. On the creation of a «rebel» social science at the service of movements promoting revolutionary change in Latin America see Oscar Varsavsky, Ciencia política y cientificismo, Buenos Aires: Centro Editor de América Latina, S. A., 1969.

the massive accumulation of data lay bare the poverty of available theory and analytical techniques and provided a powerful stimulus to the search for new approaches to data organization and syntheses.[2] The extension of these concerns to Brazil was not based on the supposition that such a research undertaking was to be reproduced there. However, it was assumed that the field will in fact gravitate toward the use of more and more inclusive data bases and consequently more complex approaches to data analysis and integration. In addition, as the search for relevance and reconnection to movements genuinely committed to social change is more intensely pursued, the need for greatly accelerated communication of research findings in diverse formats and modalities is also expected to increase.

The Model and the Method

This brief paper, focusing as it does on the experimental uses of the model, cannot attempt more than a very selective description of the model itself. A fair acquaintance with the basic structure of the model and its internal dynamics, culled from other presentations at these sessions, must be presumed. MBRSL contains a sizeable set of political actors (31 population groups and organizations) with certain characteristics (size, power, influence, income, cohesions) and points of view with respect to issues (forms of government, agrarian reform, income redistribution) that are the subject of government policy. The position of each actor is thus clearly specified in terms of his particular interests, his share in the benefits produced by the system, the instruments of action available to him, and the nature of his relations with all other actors. The government, a special actor, has some attributes not shared by others, principally the capacity to take decisions on issues for the system and to repress those who oppose these policies. Under determinate conditions groups enter into coalition and may challenge the government and its supporters. The mechanisms for the resolution of such conflicts are only very partially established so that a principal output of the model is given in terms of configurations of groups in conflict, their relative power and influence, and the issues around which conflict centers. Given the complexity of this representation of the Brazilian socio-political system, it is open to approach with diverse purposes and at quite different levels of abstraction. The question thus arises of the congruence of any set of experimental manipulations and the interpretations derived from such interventions with the particular objectives of each experiment and the socio-political processes it is especially interested in elucidating.

The most obvious type of intervention in the model would consist of modifying or systematically varying governmental policy and examining the consequences of these changes in terms of some specified evaluative scheme (not necessa-

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[2] There is a sizeable CENDES bibliography on this work. The basic political materials are reported in three volumes published or forthcoming simultaneously in Spanish and English. The first volume, A Strategy for Research on Social Policy (Frank Bonilla and José Silva Michelena, eds.) appeared in 1967. The second, Bonila's The Failure of Elites, will appear during September 1970. The Illusion of Democracy in Dependent Nations by Silva Michelena is scheduled for November 1979 publication. The MIT Press of Cambridge is producing these volumes. The matching Spanish titles, published by the Central University of Venezuela Press in Caracas, are: Exploraciones en análisis y síntesis. El fracaso de las élites and La crisis de la democracia.

rily that of government). Provision for such periodic interventions by the operator is in fact built into the model. The principal restrictions on such manipulations in this case would most likely reflect hypothetical or empirically established limitations on the decision process, whether ideological, value-based, or of some other nature. As shall be seen, the experiment that seeks to explore the nature of the links between external economic dependency and internal social structure builds interestingly around this point. Of course, even in these experiments it may prove instructive to test the consequences of eliminating such restrictions, especially in those cases where they seem to be largely subjective in nature. Naturally, interest in this kind of "policy-testing" is diminished when the decision system is not responsive to external inputs. However, there is no reason to think of alternative policy sets only in relation to ostensible power blocs or government. Policy changes may also be represented that do not imply shifts in options but the disposition of the government to open itself to determinate influences or to permit certain groups greater freedom of action. In short, experiments that seek to study policy or decision effects should, by and large, involve interventions in the model that plausibly parallel lines of action actually open to those making options, unless of course, the aim is to study the differential impact of choices in substantially transformed structural contexts.

The way to more open explorations of alternative futures is opened through this latter type of experiment, in which appreciable modifications in the relations among groups or in the relative capacity of actors may be introduced in order to examine their impact on such things as conflict levels, policy configurations, or the redistribution of status-related variables. This was the tack taken by experiments during the Rio meeting. An experiment of this type to be examined in some detail here seeks to learn more about the internal dynamics of authoritarian regimes by observing how power groups within MBRSL respond to greater participation on the part of groups seen as potential disturbers of the equilibrium of forces represented as a point of departure in the model. Since these structural relationships represent higher level abstractions, considerably more liberty may be taken in manipulations linked to imagined new states of the system.[3] Much the same kind of freedom could be taken in a set of experiments designed as a critical test of the partially formalized models contained in the work of Helio Jaguaribe, an influential analyst of Brazilian and Latin American development. The model is general enough to encompass and aid in the evaluation of multiple theories of diverse origin.

Yet another line of experimentation seeks to improve the model itself by adding elements now represented only in highly simplified if not primitive form. The elaboration of a sub-system specifying the behavior of regional actors in Brazil is a case in point as is the effort to formalize rules for linking broad value orientations to political values and political behavior. Apart from their possible contribution to the strengthening of the model itself, experiments of this type have

[3] There are obviously some tensions (dangers, contradictions) here between the precise detailing of empirically observed situations and the exploration of historically unrealized futures. On the one hand, the more shortly tethered to «facts» about a given reality a model is, the more remote the chances of producing or simulating profound or abrupt changes. On the other hand, the more free the play of variables internally or the more open the system to exogenous or fortuitous variables, the greater the loss of connection with any otherwise determined «reality».

their principal utility in the degree to which they force or aid clear thinking and theorizing about crucial and generally neglected problems. In this sense, the experimenter here again may be permitted considerable freedom in terms of innovations or modifications in the model since the function of such experiments is to stimulate theorization and to provide simple tests of the suitability of alternative ways of formally representing determinate structures and processes.

At this point the question may be raised whether it is at all appropriate to apply the term "experiment" to the activities being described.[4] Implicit in the idea of experiment as essential components are a theory of the relations among a set of variable (generally causal theories), the measuring and control of certain of these variables and some predicted outcome. The predictive weakness of social science theory and models is notorious. Oscar Varsavsky, a key figure in the basic formulation of this mode of model building, identifies four critical functions of social science models. Each of these functions is indispensable to that which follows and is to be judged successful in the degree that it advances the next level of activity. These functions are description, explanation, prediction and decision.[5] MBRSL and its direct forerunners are directed primarily toward description and analysis; they explicitly reject all pretensions at prediction or aiding in decisions. The very abstract character of these constructions is perhaps best symbolized by the designation given the first Venezuelan model: VENUTOPIA. This is so despite the fact the models acquire considerable verisimilitude as formalizations of social relations in particular countries according to the hypotheses of informed social scientists and in some cases with the numerical values of variables established through empirical investigation. It is in fact of interest and encouraging that these models seem to produce results that coincide with those of more conventional approaches to social reality, but at the present time the historicity of the processes represented is not a critical consideration in the work under way.

In what way then are the experiments that have been alluded to and to be described below in any way different from the routine processes of model construction and "tuning up" commonplace in the elaboration of any complex system representation? It must be acknowledged that the forms in which many processes are made to operate in the model are extremely primary if not ingenuous. The bases for interpreting system output — the information provided by the model concerning its changing states — are equally tenuous. But these problems are common to all approaches to the study of national political systems and comparative politics. These exercises resemble conventional social research in that they set out to

[4] When the Brazilian experiments were undertaken, few examples of formally designed experiments with this kind of model were available to the group, and those were incompletely analyzed. Silva Michelena's work (see his two books cited in footnote 2) and that on an economic model developed by a team directed by Oscar Varsavsky were the principal examples at hand. A series of papers by Carlos Domingo and Oscar Varsavsky establish the fundamentals of the method of «numerical experimentation» and the general characteristics of these models. See Un Modelo de Utopia de Moro, Desarrollo Económico, Vol. 7. Buenos Aires, 1967, and VENSEP: Modelo matemático de la sociedad venezolana, mimeo., Caracas, 1967.

[5] Oscar Varsavsky, Los Modelos Matemáticos y las Predicciones en las Ciencias Sociales, CENDES, Universidad Central de Venezuela, Serie III, No. 6, 1968.

study problems of social science interest according to specified rules. They are experiment-like in that:

1. They formulate problems in terms of hypothetical relations among a set of variables contained in the model.

2. They specify changes in the model to be produced internally or by external intervention and which permit further tests or elaboration of the hypothetical relations already specified.

3. They foresee consequences of some importance to the total system of the changes in relations being examined.

Of course, if the consequences foreseen in item three can be very simply inferred from direct manipulations of the model, the exercise holds little interest. Something like experimentation is possible because MBRSL is a sufficiently complex social representation so that details of its behavior are not easily anticipated. The models are intellectual predictions that escape the control of their creators and become thereby objects of study rather than mere instruments of research. Even persons who are well acquainted with the content and dynamics of a given model will continue over time to discover new facets of its behavior. Therein lies a great part of the fascination of the method.

Stating descriptors and relationships in mathematical form by itself adds little to the explanatory or predictive power of the model. The element of quantification does, however, make possible an exhaustive check of the consequences of any set of propositions concerning the relations among a set of variables. The method attacks the overdeterminateness and elliptical reasoning common in sociological explanation.[6] It exacts decisions from the social scientist with respect to the linguistic abstractions he normally employs. Initially, considerable discomfort is generated by what is experienced as great arbitrariness in fixing the numerical values of group characteristics or the relations among actors. Gradually it is discovered that these numbers are no more arbitrary or less ambiguous than the verbal phrases in which such estimates are couched in other models. While the numbers thus in many cases add only marginally to precision, they do make for economy and ease in computation and keeping track of changes. More importantly, they make it easy to discard some estimates and replace them with others, that is, to experiment.[7]

Each experiment thus departs from a particular situation (scenario) and runs through a sequence of cycles of varied duration in which each cycle represents a year of natural time. The changes and events registered during each cycle reflect the operation of the laws of hypotheses that regulate the model's behavior. Since interest has centered on structural changes (the relations among classes and their sub-sectors, the redistribution of status-fixing variables, changes in attitudes and values), these runs generally cover a minimum of five years.[8] Notions

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[6] On this point see Silva Michelena (Exploraciones en Análisis y Síntesis, op. cit., p. 473)

[7] Varsavsky observes that the laws in natural language models are weak, contradictory and incomplete (Los Modelos Matemáticos y la Predicción en Ciencias Sociales). MBRSL and others of its kind are not on safe ground on the first count but generate some interesting ways of dealing with the latter problems.

[8] Only some changes in the values of variables produce events. For example, only when antagonism between two groups reaches a certain threshold and other conditions are fulfilled will conflict occur. Since MBRSL seems best suited for the study of changes expected over five

about the time spans within which it is reasonable to expect changes in some variables as a consequence of previous changes in other variables frankly rest more or less equally on common sense, historical experience, and social theory. Where reasonably reliable time series do not exist, these time scales must rest on the researcher's intuitive judgment, though, of course, he has the option of testing a variety of assumptions. The analysis proceeds basically via comparisons of the starting configuration with subsequent points in time and efforts to reconstitute the process through which important observed changes have been produced. A few observations about the form in which the model gives information about itself are worth making.

1. Data are presented in a format (tables and matrices) familiar to social scientists. They are given in a form in which the social scientist is accustomed to receiving and organizing information. No computer knowledge is required to examine them.

2. The initial values of the variables are estimates with varied degrees of empirical grounding. In the case of MBRSL these values reflect a consensus among the group of social scientists present in the Rio meeting mentioned earlier.

3. These data along with the program that computes the values of other variables and their subsequent changes constitute the full set of information and hypotheses that have gone into the model. Even though every item and relationship is made explicit, it should be emphasized that:

a. with respect to any particular experiment, it is probably impossible and of little use to attempt an exhaustive description of all these elements, and

b. quite different "scenarios" can be built around the same starting configuration, depending on the experimenter's interests.

The Design of Experiments

At the present writing five experiments or distinct exercises using MBRSL are at various stages of elaboration. Emphasis here will be given to the diversity and range of formulations attempted rather than to details of the historical and theoretical background, the implementation, or especially the "findings" of these exercises. These "findings", as has been insisted, are not predictive and are principally suggestive in the kinds of analysis they point to as necessary to bring experiments to a higher level. Further comments on the lessons derived from the experiments are reserved for the closing paragraphs.

It should be kept in mind also that this is the work of graduate students for the most part embarking for the first time on a substantial piece of independent research. The political system they are examining is in an emergent state after an abrupt shift of course in 1964. Only recently have the new political forms that have been crystallizing over the past six years begun to be studied as a system cap-

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to ten years, it may be regarded as a model of a middle run change. It is interesting that Oscar Cornblit, who is testing a model that seeks to track short-run events, especially coalition behavior, uses a very similar set of variables. In his model each cycle represents one month. This is an extraordinarily complex problem affecting models in all the sciences. An interesting recent discussion of time, cause, and system states can be found in Louis S. Schaw, The Bonds of Work, San Francisco: Jossey Bass, Inc., 1968, pp. 16-39.

able of prolonging itself indefinitely rather than as a temporary aberration or pause within a broader democratizing transition.

One way of viewing this regime is in terms of its major policy options and the way these relate to long articulated national objectives.[9] This brings into focus the "policy-testing" capabilities of the model and raises the question of the reasons for the long-standing gap between national aspirations and achievements despite ambitiously stated commitments and elaborate planning operations. But the intent is to go beyond the documenting of failure or uncovering the alternative functions of planning that is not genuinely oriented to the accomplishment of its stated goals. By centering attention on a double set of long enshrined goals, autonomy (enhanced freedom of action within the world economy) and integration (the effective incorporation of all in the nation to a minimal and increasingly equal share in the social product), one can ask whether present policies promise to approach these goals and how the costs of policies now in effect compare with a policy set that would bring these conditions nearer if such a set is available.

Two major operations were required here: first, to adequately conceptualize these goals and their opposites (dependency and marginalization), second, to establish some guidelines for calculating policy costs. In both cases, naturally, this had to be done in ways already or readily representable within the model. Consequently, dependency and its attendant marginalization was defined as an option for a development policy that accepted certain restrictions on internal and foreign policies as a way of ensuring a steady flow of external resources as well as an economic and security umbrella for whatever crises might eventuate. Concretely within the model this meant that for this experiment a government choosing the dependency option eschewed aggressive policies with respect to income redistribution, agrarian reform, the pace of industrialization, taxation and mass political mobilization. This means in effect development without disturbing the internal order or modifying it only very slowly. On the contrary, a government choosing to develop in an autonomous style *had* to adopt aggressive actions on all these fronts. At the end of five and ten year cycles, comparisons of socio-economic indicators and group characteristics would determine the actual degree and nature of remaining dependency and marginalization as well as numerous political by-products of these policies. Attention would also be given to costing from diverse perspectives the gains and losses to the nation as a whole and to particular sub-groups.

Quite a different slant of the current regime is taken in a second experiment concerned with the prospects for a partial redemocratization of political life over the next five years.[10] The root concern of this experiment is with the formal adaptation of a model of authoritarian regimes elaborated by Juan Linz for the Spanish case to the situation now evolving in Brazil. That situation is approached not as a passing military intervention but as a potentially stable authoritarian regime sharing the characteristics of similar governments of long standing in Europe and others that are now appearing in the New World. These authoritarian regimes,

[9] Benicio Viero Schmidt, Dependência e Integração: Uma Avaliação de Politicas, unpublished master's thesis, Dept. of Political Science, Federal University of Minas Gerais, 1970.
[10] Malori Jose Pompermayer, Autoritarismo no Brasil, unpublished master's thesis, Dept. of Political Science, Federal University of Minas Gerais, 1970.

as Lins has noted, are neither imperfect democracies nor weak dictatorships but have a structure and dynamic all their own.[11] The main features of these regimes are delineated (limited pluralism, low mobilization, controlled repression, the down-keying of personalism and charisma, the reign of moralizing "mentalities" as against elaborate and highly charged ideologies). The experiment builds around the idea that such regimes, and in a noteworthy way the Brazilian version, are under continuous pressure to partial openings in efforts to maintain a façade of democratic practice, gain added control over the token semi-opposition they tolerate, and further isolate more determined dissidents. The principal instrument through which such openings (*aberturas*) are being pursued in Brazil are the parties organized by the regime.[12] The experiments explore the conditions under which such openings might in fact lead to a revitalization of the parties as political actors and what the regime's response is likely to be to various degrees of success by the parties. In contrast to the first experiment in which policies were the principal element manipulated, these experiments rest on alterations of the characteristics of certain actors and modifications in the structure of relations among actors. Concretely, the power, cohesion, information, and instruments of pressure available to parties are strengthened and their influence over certain groups is enhanced. These groups are allowed to infuence the parties in return, and the government becomes less sectarian (i. e., less resistant to outside influences). The effects of several such *aberturas* are weighed after a five year period in terms of their impact on policy, conflict levels, party preferences, levels of participation and repression as well as issue consensus.

Quite another order of conceptualization is involved in a third exercise which seeks ways in which broad value orientations as well as commitments to certain political values may be linked in the model to political behaviors, chiefly the taking of positions on issues and alignments in coalitions.[13] Before this attempt, value differences among actors in the model were represented in summary form in a matrix of ideological distances, which was intended to subsume a broad range of culturally differentiated experiences and orientations. These distances figured centrally in the calculation of antagonism among groups.

The addition of this value sub-system to the model was intended to shed light first on the place of values as a factor in choice behavior and the assignment of meanings to social events and second on the place of consensus-dissensus on values as an element enhancing or debilitating the national capacity to effectively pursue goals. The issue positions (evaluations) and coalition behavior of actors

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[11] Juan J. Linz, An Authoritarian Regime: Spain, in Erik Allardt and Yrjo Littunnen (eds.), Cleavages, Ideologies and Party Systems, Helsinki: Academic Bookstore, 1964.

[12] A series of similar experiments by Ligia Maria Leite Pereira hypothesizes that such openings may evolve through a reconciliation of the regime with intellectuals and through them with other sectors of more serious opposition (e. g., students and labor). Her experiments put to a test within the model the ideas of Helio Jaguarube, a well known Brazilian political scientist.

[13] Evelina Dagnino, Sistemas de valores: um modêlo, unpublished master's thesis, Dept. of Political Science, Federal University of Minas Gerais, 1970. A similar range of problems is attacked by Celina Pinto Albano, who is engaged in an effort to represent regions as actors within the model. This involves the challenging task of identifying particularities of regional social and political structures and their links to national power centers in ways that can be stated numerically and as logical or mathematical relationships.

in the model change in response to information, influences received, and certain kinds of experiences (e. g., how each group perceives the effects of policy or the prior experience the group has had of coalition with other actors). In this exercise two nesting sets of values were superimposed as elements controlling the rate of change in evaluations. At the same time, sustained changes in evaluations (i. e., those ratified in experience) were allowed reciprocal effects on higher order values. The political values introduced include nationalism, democracy, and heteronomy (a preference for delegating power upward when a chance to participate in a decision exists). A second set of overarching values partially control changes in political values and are themselves affected by sustained change in these values of lesser scope. The higher order orientations include ways of relating to man, to nature, and to time.[11] Both sets of values are roughly ordered along a dimension of traditionalism and modernism and thus allow the computation of an overall distance on value positions between each pair of political actors. This distance in turn feeds into the calculation of antagonisms and the incidence of conflicts.

As can readily be sensed, in this kind of exercise a major part of the effort involved goes into sorting out such a complex array of definitions and relationships, assigning numerical values to the value position of each group, deciding how each value dimension relates to specific issues (evaluations) and reducing all such rules to computable statements. But this added construction also opens the way to a new area of experimentation in which a variety of value profiles for the society can be compared as regards their apparent political implications. An often heard statement is that societies in transition are handicapped if not crippled by deep-lying value conflicts between developed sectors and the more traditional. What may be expected if such value differences are eliminated or substantially reduced? Trial runs of this kind have now been made.

Conclusion

A so far unmentioned reason for saying little or nothing about the substance of the outcomes of such experiments is that despite all disclaimers of predictiveness, such results tend to be taken with excessive seriousness, or at least attract far more attention than the learning, theorizing, and analytical lessons where, for the time being, real gains seem to lie. Above all such results are often seen as expressing in some hidden way the masked political intention of the experimenter. In point of fact the experience with the present model seems to parallel that of others with similar constructions. Such complex system representations prove *resistant to change* even by what the experimenter imagines to be quite radical interventions. Substantial changes in parameters, policies, or group characteristics produce only miniscule movement in the direction of desired or hypothesized system states. In this sense such models are not only unresponsive to manipulation but counter-intuitive.[15] This experience can prove discouraging for those who

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[14] On this point the experimenter has followed closely the scheme developed by Florence Kluckhohn and Fred Strodbeck in Variations in Value Orientations, Row, Peterson and Co., 1961.
[15] See for example Jay W. Forrester. Urban Dynamics, Cambridge, Mass.: MIT Press 1969.

look to such models for reassurance that appreciable social change can be brought about by rationally thought out adjustments. At the same time, the models in their present form are clearly inadequate tools for studying crisis situations or tracing movements leading up to substantial structural rearrangements. Their chief virtue, however, is that they provide an engaging and promising way of coming to grips with this array of problems with a realistic sense of their complexity.

More importantly, each experiment generates demands for fresh theory and specification of concepts, at the same time providing new data and new needs for analytical tools. The investigation of the links between dependency and internal stratification reveals the poverty of available theory connecting economic policies and changes to social and political effects. Having a sizeable output of information concerning changes and structural relations among groups (as in the experiments on authoritarianism), lays bare how little we know or can hypothesize concerning any given pattern of change and how crude our notions for discriminating among structural arrangements really are. Seeing a system which has been decidedly homogenized in values by experimental fiat continue to manifest high levels of conflict awakens one to the fragility of our ideas for tracking causes over time. We may often be in the position of saying that nothing is happening simply because we lack any way of recognizing events.

THE DEMAND FOR SOCIAL AMENITIES: SOME REMARKS ON ITS FUTURE IN FRANCE

V. SCARDIGLI

FRANCE

For a number of years, we have been studying the future of social amenities in France. Our article[1] sums up one of the two surveys we made on the matter. Now I shall more broadly explain what has been the question, and how we have ried to answer it.

I. PROBLEMS AND METHODS

1. Decision-makers' needs and scientific investigation

Decision-makers undeniably require information about the needs for social amenities: what part do collective services play in the present life of our country and above all what part will they play in the future.

At the very moment French government is making economic choices that are very important for our future society; our National Planning Agency is giving priority to so-called productive investments; we shall only develop those services that are supposed to be a means of economic development of our country: roads, communications, vocational training. On the other hand, the collective services (with a social purpose) will decrease. That would probably not happen if research had been conducted showing the long term consequences of such a choice.

a) Consequences on production itself (since I believe that each improvement in social welfare entails both economic and social outcomes).

b) Consequences on social disparities and political climate. At the present time collective services often offer underprivileged groups the one way to "personality development", through medical, cultural, educational and social equipments. There is some evidence that the fewer the explicit needs of these groups, the bigger will be the risks incurred by our society.

Those are some assertions which decision-makers require prospective research to confirm or invalidate.

However, we must separate political needs and scientific investigation.

From a scientific point of view "collective needs" are culture-determined: hunger is not sufficient for explaining attendance at collective meals, for instance.

Econometric analysis was conducted in our research center, on patterns of consumption by households; it did not reveal any durable grouping of expenses, which could be featured by a permanent structure of "needs". On the present problem we made two surveys on a large range of social amenities. They both underlined the lack of a common dimension. The "collective" is but a convenient category for National Accounting, and it lumps together services which indeed serve very different psycho-social functions. This is why we shall only speak of "demand".

2. Problems in improving methods

We have met with problems that are current in forecasting studies: shortcoming of methods, and difficulties to connect findings from different sources: historical approaches, time-series, international comparisons, experts' knowledge, surveys and experiments. Furthermore, we faced several specific problems in making surveys and explaining their results.

a) We wanted to predict an evolution with respect to time, yet our available data refer to a single point in time. We often relied on differences between behaviors of groups supposed to be "leader groups" and behaviors of other groups; on discrepancies between supply characteristics and behaviors; lastly, on differences between supply characteristics and behaviors.

b) I should like to stress how useful it is to make some kinds of surveys, which seem better than the classical samplings which only look for a good representation of the persons (or families).

— Surveys on supply

It is very important to observe the changes in attendance rates when some supply characteristics are changed. We only tried to do it with spatial comparisons, but it would be more instructive in the case of real increases in fares, for instance, which would realize in vivo experiments.

— Context sampling

Raymond Boudon distinguishes two kinds of variates. *Atomistic* variates characterize in an individual way each subject or equipment, such are for instance the age of respondents or the quality of services.

Collective (or context) variates characterize the whole context in which everyday life is spent. For instance all the persons working in the same neighbourhood, working in the same firm, and so on, are supposed to be influenced in the same way by these specific surroundings and social circle.

Our survey revealed that context variates do have an effect upon attendance rates. Furthermore we think it is important to develop surveys on large samples, designed according to an experimental plan, which control the three sets of variates (subjects, equipments, social and ecological context) and isolate the specific influence of each one.

II. FIRST DATA

I shall tentatively set out two sets of findings, which are relevant to forecasting and influencing the future.

1. General increase of the demand[2]

A great number of observations undeniably point to a *tendency to a fast increase of the demand of amenities and among them of collective services*. An important change in French families' way of life seems to be taking place, *a cultural pattern is speading which includes the general use of "services for households"*.

This is appearing in behaviors and attitudinal trends:

— Traditions of economic and social self-sufficiency within the family are becoming obsolete and the use of out-of-home services (libraries, collective meals at school or work, public nurseries, etc.) is no longer abnormal. There are changes in family norms too: families accept each member (even wife and children) to have their own activities outside the home.

— The value of time increases: time can be saved by the use of services; tiresome tasks can be quickly dealt with.

— Very high quality is demanded, especially where the "person" is concerned in medical care or education, and bespoke individual services cannot satisfy this demand in certain cases.

— Progress in education and information helps people face the rules and impersonal or complex structures of some collective services.

— Last but not least, this new pattern gives more value to leisure and especially to the diversity in the practice of activities that develop the personality.

2. The driving power of supply and context

Now I want to emphasize *the potential changes in our future way of life as a result of changes in supply and social context*.

a) For each collective service *quality, low fares and easy access are very important;* they are the reasons why people's choices go to either collective or individual services.

The bad quality and increased prices of collective urban transport probably explain that they do not develop and explanation is partially the same even for cinemas and theatres which are decreasing fairly quickly in France.

So, what part of the demand will go to collective services largely depends on the measure in which collective supply will go to meet customers instead of waiting for them.

b) The *set of services* supplied to households is even more important. We found that *the structure of families' behaviors is inclined to be like the structure* n *collective services available in the area.* In the case of a poorly equipped area, evell the available services are scarcely used, if at all; conversely, in a "rich" and we*of* equipped area, families use even the remoter services more intensively.

c) Another finding: people use to say there are boundaries to the *maximum number of activities* practiced by the same person. But our surveys show that favourable circumstances make *these boundaries recede*.

Some activities (for instance, sport and intellectual activities, such as reading or attending the theatre) are often statistically opposite, as if they were in compe-

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[2] See the works of A. Pitrou.

tition, according to a cultural pattern which is deep-rooted in the French mind. Now they are becoming complementary, that is they are often practiced by the same subjects, in a "rich" area.

d) Finally we must stress the *importance of the social context*, which seems to emphasize the previous variations.

The social context — neighbourhood, firm, parish, school.... — can entice families to use more collective services. There seems to occur an induction of activities, each one stimulating the others; moreover, *groups can play a mediating part* in focusing possibilities of easy-to-go services, in broadcasting information on them, and in spreading this cultural pattern that we mentioned above.

All these findings give decision-makers a possibility to develop social amenities and therefore *an important responsibility*.

Conversely, they reveal the implications *of a deficiency in collective services*. For instance, they suggest that poverty is a self-maintained system with cumulative effects in cultural and leisure life: "poor" people often live in areas where supply of social amenities is scarce and of a bad quality; now this lack of social and ecological environment may involve increased poverty in the activities practised by these families.

Conclusion

In concluding this statement, I want to underline that collective services are but a means which our society may use in reaching its aims, and among them an aim of reducing inequalities.

Research must go further in analysing this problem: do collective services actually reach this target of social redistribution of national prosperity?

Our surveys show that some redistributive effects take place thanks to subsidized services, but are often slight.

If the community were to decide, more explicitly than hitherto, that the use of collective services is to be one of the means of reducing inequality of incomes and standards of living, then the problem would be to enable the lower income families to resort to collective services more easily.

In France, and probably in some other countries, the very problem is not, or not only of examining what will be families' preferences in a "spontaneously-emerging" future: sociological analysis can take the place neither of economic accounts, nor of political choices.

II. MODIFICATION OF SOCIAL RELATIONS IN SOCIAL CHANGE

II. MODIFICATION DES RELATIONS SOCIALES DANS LE CHANGEMENT SOCIAL

PRINCIPES MARXISTES DE LA CONCEPTION
DE LA STRUCTURE SOCIALE ET DU CHANGEMENT SOCIAL

MILOŠ KALAB
TCHÉCOSLOVAQUIE

La conception dialectique matérialiste de Marx de la société part de la présupposition d'un rapport nécessaire entre la structure des rapports entre les hommes d'un côté et les rapports de l'homme envers la nature de l'autre. Le processus de travail par l'intermédiaire duquel s'effectue l'échange des matières entre la nature et la société, est la condition de l'existence de la société; il détermine, sous la forme historique concrète d'un mode de production donné, non seulement un certain rapport entre l'homme et la nature, mais encore la place que l'homme occupe dans le système des rapports de production de la société, le caractère d'ensemble des rapports humains, des rapports de l'homme aux produits de son activité et, en dernière analyse, le rapport de l'homme à lui-même.

Si Marx évalue les rapports de production comme des rapports essentiels, structurant le système entier des rapports sociaux d'une formation socio-économique donnée, il évalue aussi, dans l'ensemble des rapports de production, les rapports de propriété comme des rapports fondamentaux, étant donné que ce sont eux qui limitent le caractère immédiat ou médiat du rapport de l'homme à l'objet de son travail. C'est pourquoi les rapports de propriété constituent le critère fondamental de la conception de Marx de la différentiation de classe de la société.

La théorie marxiste des classes et de la lutte des classes ne prétend pas donner une description exhaustive de la différentiation verticale et horizontale des groupes de la société capitaliste. Son but ne consistait pas à optimiser, par la voie de réformes, le fonctionnement et à consolider l'équilibre et la stabilité d'une société donnée, donc d'une société de classes antagonistes. Marx s'efforçait de révéler des groupements d'intérêt, déterminés objectivement, par leur position économique, groupements qui forment le mouvement social, cherchent à transcender le système social donné, à entraîner ses changements qualitatifs. Pour Marx, l'analyse de classes est l'instrument permettant de comprendre le dynamisme évolutif intérieur de la société fondée sur la propriété privée, de comprendre les traits spécifiques de son déterminisme, de prévoir ses changements; elle est donc le point de départ de la conception révolutionnaire pratique.

L'importance méthodologique de la théorie marxiste des classes ne réside donc pas dans le schéma de classes résultant et dans l'applicabilité universelle de ce dernier, mais dans le principe de l'analyse de la structure des besoins, des intérêts et des aspirations en tant que source de motivation de l'activité des groupes

sociaux, aboutissant au changement social. Sous cette forme, elle revêt un caractère non pas historiquement limité, mais général.

Dans cette optique, c'est un malentendu de principe, si T. Parsons, dans son étude „Les classes sociales et le conflit des classes à la lumière de la théorie sociologique moderne" (1949) „modernise" Marx en faisant de sa propre conception du système social le point de départ de l'analyse de groupes. Dans ce cas en effet, cette analyse n'est qu'une analyse du mode d'intégration et d'organisation des rapports sociaux dans le système social par l'intermédiaire de modèles institutionnalisés, par l'intermédiaire d'un système donné de normes. Au point de vue de la conception fonctionnaliste, la question de la satisfaction des besoins ne peut être posée qu'en regard du système de la personnalité conçu isolément et indépendamment du système de la société. Au point de vue du système de la société, on ne peut poser que la question de la fonction des différentes couches sociales dans le processus d'intégration du système donné, sous l'angle de l'équilibre et de la stabilité de ce dernier. La conception de Parsons admet bien l'existence des sources positivement institutionnalisées du changement, mais elle ne le fait que dans le cadre des mécanismes du système homéostatique, dans lequel le changement constitue un phénomène essentiellement négatif, une déviation.

L'évaluation de Marx du mouvement ouvrier, donc d'un mouvement disfonctionnel en égard au système capitaliste, en tant que facteur progressif du changement qualitatif évolutif du système dans l'intérêt du progrès social, part d'une conception essentiellement opposée à la conception systémologique de Parsons. Marx part de la conception de la société en tant que processus dans lequel se fait valoir l'union dialectique de la stabilité et de la variabilité, dans lequel se trouvent inséparablement liés l'aspect de fonctionnement (donc du processus rétroactif de reproduction réitérée d'un système donné, à un niveau qualitatif historiquement déterminé) et l'aspect d'évolution (donc du processus du changement qualitatif d'un système donné et de sa transformation en un système nouveau, différent du précédent par le niveau de la différentiation et de l'intégration).

La conception dialectique marxiste opère donc avec la notion du changement suivant deux plans: 1) au niveau des changements survenus à l'intérieur d'un système donné où, en égard au processus évolutif, le changement revêt le caractère d'un changement quantitatif et peut fonctionner, entre certaines limites, comme le moyen assurant l'équilibre du système; 2) au niveau d'un changement qualitatif, révolutionnaire du système, en supposant que les conflits à l'intérieur des systèmes ne peuvent être écartés dans le cadre du système donné, mais uniquement moyennant une transformation qualitative du système en tant qu'ensemble. Dans la conception marxiste, la question de la fonction des groupes sociaux ne se pose pas donc au niveau du fonctionnement et de l'équilibre du système social donné, mais au niveau du changement évolutif de la société. Ce qui signifie que le comportement disfonctionnel d'une certaine classe sociale, sous l'angle d'un système donné, historiquement déterminé, peut être estimé comme eufonctionnel au point de vue de l'évolution de la société dans son ensemble, que le système social donné est conçu comme historiquement relatif et que, par conséquent, il ne constitue pas le critère absolu pour l'évaluation du changement.

Par opposition à la conception fonctionnaliste, posant comme critère absolu la stabilité relative du processus social, la conception conflictualiste, représentée actuellement surtout par R. Dahrendorf, postule le changement comme le prin-

cipe absolu du processus social, ignore les sources intérieures de la stabilité relative dans ce dernier et interprète les troubles du changement permanent comme une intervention extérieure négative opérée dans le processus du changement. Aux tendances du conflictualisme, quant à la conception du changement, viennent s'associer, sous l'aspect de la conception néo-hégélienne de l'historisme, les représentants de l'école de Francfort T. W. Adorno et J. Habermas qui réduisent les lois sociales aux lois de l'évolution, négligeant les lois du fonctionnement de la société et annulant par conséquent l'importance de l'analyse structurale et fonctionnelle de la société au niveau systémologique.

La conception de Marx de la totalité concrète, bien que le principe de l'historisme lui soit immanent, ne réduit pas les lois sociales aux lois de l'évolution. Elle conçoit toujours l'évolution comme l'évolution d'un certain système fonctionnant, structuré et relativement stable. Cela signifie qu'à côté de l'analyse historico-génétique, l'analyse structurale et fonctionnelle constitue pour Marx le moment nécessaire de l'analyse de la réalité sociale. L'historisme marxiste ne pose pas comme critère absolu le changement, ce qui veut dire qu'il conçoit même les systèmes sociaux comme des systèmes à allure réitérée entre les limites d'une étape historique donnée.

L'analyse de classe, en tant que condition de l'explication du changement social, constitue donc simultanément, dans la conception marxiste, le présupposé de l'explication de la stabilité relative d'un système social donné dans ces déterminations essentielles, permettant d'identifier la qualité d'un certain système social sous la notion d'une certaine formation socio-économique, malgré la diversité des formes qu'elle acquiert à la suite des changements déterminés dans le temps et dans l'espace se poursuivant à l'intérieur du système.

La différentiation des intérêts et son caractère antagoniste n'excluent donc pas, dans la conception marxiste, l'union fonctionnelle du système social entre les limites d'une étape historique donnée. Dans son analyse du système capitaliste, Marx démontre le caractère complémentaire dialectique des rôles des exploitants et des exploités, du travail et du capital et évalue pleinement la fonction des principes régulateurs de la société entière lors de la création de l'union antagoniste relative du système capitaliste. T. Parsons a donc tort, lorsqu'il affirme dans sa „Théorie sociologique et société moderne" que la conception de classe de la société chez Marx sépare la société en deux systèmes antagonistes indépendants d'une solidarité mécanique.

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L'importance méthodologique générale de la théorie des classes de Marx ne réside pas dans le schéma résultant de classe, mais dans les principes de l'analyse de la structure des besoins, intérêts et aspirations sociaux en tant que source de motivation de l'activité humaine.

L'activité humaine, la pratique, est conçue dans la doctrine marxiste comme une forme générale du mouvement de la société. L'histoire de l'homme est l'histoire de l'activité humaine. L'activité sociale ne se réduit pas dans cette conception à la somme des activités subjectives actuelles, mais elle est conçue comme un système de processus dialectiquement déterminés par les conditions naturelles et culturelles. Pas leur activité les hommes établissent leur rapport à la nature,

leurs rapports mutuels, ils cherchent à satisfaire leurs intérêts en tant que per-
sonnalités et ils entrent en rapport avec la culture en tant qu'ensemble des pro-
duits de leur activité.

L'activité humaine englobe deux aspects fondamentaux: 1) les conditions
objectives, naturelles et culturelles et 2) l'importance subjective en vue de la trans-
formation de ces conditions; elle représente donc l'union du comportement et
de la création. Elle englobe, d'une part, la réaction d'adaptation rationnelle aux
conditions naturelles et culturelles données et, d'autre part, la transformation
pratique, consciente, de ces conditions. Ce double caractère de l'activité sociale
détermine aussi le caractère spécifique du déterminisme social: l'union spécifique
de la nécessité et de la liberté dans la société.

A l'aspect conditionnel de l'activité humaine se rattache notamment la no-
tion du besoin. Le besoin est l'état actuel ou la disposition du système, caracté-
risé par le manque de conditions intérieures ou extérieures nécessaires en vue de
sa reproduction ou de son évolution. Le besoin peut se rattacher soit au sujet
humain (à l'individu ou au groupe), soit au système social ou, le cas échéant, à
un des sous-systèmes. Dans ce cas, on peut aussi parler des exigences fonctionnel-
les du système. La notion du besoin exprime négativement le caractère déterminé
intérieur et extérieur du système et implique dans ce sens l'intention objective gé-
nérale — la tendance visant à satisfaire le besoin. Dans ce sens, les besoins sociaux
constituent la source du mouvement et des changements sociaux. La non-satis-
faction des besoins engendre la frustration, le dérangement fonctionnel, la stagna-
tion de l'évolution et, dans le cas extrême, la fin du système.

La structure des besoins constitue la base objective de la différentiation des
intérêts de la société. A la différence de la notion du besoin, la notion de l'intérêt
qui se rattache uniquement au sujet humain (à l'individu ou au groupe), implique
les principes de l'activité humaine en tant qu'activité orientée vers un but. En tant
que catégorie sujet — objet, l'intérêt englobe un certain degré de connaissances
et d'évaluation des besoins et de la situation, limitant les possibilités de leur satu-
ration; il suppose un certain choix et une certaine hiérarchisation des objectifs
et des moyens, donc un programme, une stratégie et une tactique de l'activité.
Le sujet de l'activité peut alors suivre ses propres buts ou les buts du système so-
cial auquel il s'est identifié. La structure des intérêts implique le système des va-
leurs de motivation et constitue par conséquent une des sources essentielles du
mouvement social. Une importance particulière revêtent, pour l'analyse du chan-
gement social, les aspirations, par lesquelles nous entendons des intérêts ne visant
pas uniquement la reproduction de la position sociale du sujet, mais le chan-
gement de cette position, l'objectif visé se trouvant alors à un niveau hiérarchique
plus élevé.

Conformément aux principes du matérialisme historique, l'analyse de classes
de Marx part en premier lieu de l'analyse de l'activité de production en tant que
condition d'existence de tout le processus social. Elle suppose que c'est surtout
la position que les hommes occupent dans le système des rapports de production
qui détermine la structure des besoins, des intérêts et des aspirations d'une for-
mation socio-économique donnée et, par conséquent, le dynamisme de cette der-
nière. L'analyse du caractère de l'activité de production et des conflits d'intérêt
qui en découlent présente aussi une importance particulière pour l'analyse de la
société socialiste, étant donné que même à l'intérieur de celle-ci les groupes et les

intérêts se différencient et qu'il y existe des différences entre les orientations des valeurs.

La collectivisation socialiste supprime la différentiation antagoniste des classes, créant une union d'intérêt supérieure de la société dans ce sens, que les intérêts des différents groupes sociaux ne sont plus incompatibles, mais qu'ils peuvent être satisfaits dans le cadre de la formation socio-économique donnée. Abstraction faite des conflits extérieurs, découlant de la coexistence de deux systèmes mondiaux et de l'influence de ceux-ci sur la différentiation de groupe de la société socialiste et abstraction faite des survivances d'éléments bourgeois et petit-bourgeois, on peut constater que la société socialiste ne crée pas, par son évolution immanente, des conditions économiques pour la naissance de la différentiation antagoniste de classe.

Le caractère de classe de la division du travail influence sensiblement la différentiation verticale de la société; il se crée des strates relativement fermées dont le critère d'incorporation ne réside pas dans le rendement réel ou dans la disposition respective, mais dans l'appartenance de classe. La stratification dans le système antagoniste de classe est essentiellement ascriptive; aussi le système ne manifeste-t-il qu'une mobilité de génération minimale entre les différentes strates.

Dans le système socialiste évolué, fondé sur la propriété collective, le principe décisif de la différentiation verticale est celui du rendement. Le caractère de classe de la division du travail ayant été supprimé, il existe la possibilité de se faire valoir dans le système des rôles, d'après les facultés et le rendement. La propriété collective ne constituant plus la condition de la formation des couches fermées, la mobilité sociale verticale se trouve accrue.

Même en admettant que pendant l'étape révolutionnaire transitoire de la prise et de la consolidation du pouvoir la situation du système socialiste est plus compliquée et qu'une application conséquente du principe du rendement est historiquement limitée par le principe politique de classe, ascriptif de l'occupation des rôles, on peut poser l'hypothèse que le système socialiste, en ce qui concerne la mobilité verticale, est plus ouvert que le système capitaliste.

Le fait que la différentiation de classe de groupes antagonistes se perd peu à peu dans la société socialiste ne signifie pas que disparaît la différentiation de groupe et d'intérêt en général. La collectivisation affranchit la division du travail des conditions antagonistes de classe, supprimant la division du travail abstrait en travail nécessaire et en sur-travail la division du travail en travail pour soi-même et pour le capitaliste, le principe de classe de la division du travail en travail intellectuel et physique — mais ne supprimant pas la division du travail en général, ni au sens technique ni au sens social. Dans la phase socialiste de la société communiste nous n'assistons pas encore à la division volontaire de l'activité d'individus librement associés, une certaine activité étant toujours fixée à un certain groupe social. Cette fixation se manifeste comme une nécessité extérieure. Seule disparaît la division du travail découlant de la subordination du travail au capitale; ce qui subsiste, c'est la division en tant que telle et, par conséquent, la différentiation d'intérêt des groupes en tant que source du dynamisme de la société socialiste.

Le noyau général de l'analyse de classe marxiste est donc l'analyse de la structure d'intérêt de la société, applicable à n'importe lequel des types du système social. La connaissance et l'observation de la différentiation des intérêts et de la structure respective des valeurs de motivations constitue, même dans la société

socialiste, un facteur important du changement social. La différentiation d'intérêt détermine l'orientation et l'intensité de l'activité humaine et exerce une pression sur les changements du système social qui correspondent à l'évolution des besoins humains.

Le marxisme considérait toujours l'analyse de la structure d'intérêt de la société comme une tâche scientifique compliquée. On sait que Marx, en analysant et en organisant le mouvement ouvrier, distinguait les intérêts illusoires des intérêts objectifs, les intérêts essentiels des intérêts secondaires, partiels, des généraux, qu'il analysait les intérêts au point de vue écologique et du temps, qu'il faisait la distinction entre les besoins d'existence d'une part, dont la satisfaction entraîne des changements à l'intérieur du système qui restituent l'équilibre de ce dernier, c'est-à-dire rendent possible la reproduction du système au niveau qualitatif donné, et les besoins d'évolution d'autre part, dont la satisfaction est conditionnée par le changement qualitatif du système dans son ensemble.

En outre, les besoins et les intérêts ne sont pas isolés dans le contexte du système social. Ils s'interpénètrent, entrent en conflits et sont fonctionnellement liés. La satisfaction d'un certain besoin qui, de façon médiate et sous forme de l'intérêt, devient le motif de l'activité orientée, se réalise en règle générale moyennant la satisfaction de toute une série d'autres besoins qui revêtent, par rapport à l'objectif visé, le caractère d'instrument. Etant donné que l'atteinte de l'objectif dépend du choix des moyens, l'objectif même limitant ce choix, le marxisme accorde une attention particulière à l'analyse de l'interpénétration et de l'enchaînement des intérêts. On connaît à ce sujet notamment la théorie de Lénine sur la révélation du chaînon principal en tant que moyen instrumental important de saturation d'une chaîne donnée de l'orientation des intérêts.

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Bien que le marxisme attribue à l'analyse de la différentiation d'intérêts un rôle de première importance lors de l'interprétation de l'orientation de l'activité et des sources du changement social, il ne considère pas — à la différence des tendances psychologisantes — la différentiation des intérêts comme l'explication unique de l'orientation de l'activité et du changement social. Il ne perd pas de vue le lien dialectique existant entre l'individu et le groupe social d'une part et le système social d'autre part, le rapport dialectique entre les besoins des hommes et les exigences fonctionnelles du système social.

L'orientation effective de valeurs, déterminant l'orientation de l'activité, n'est pas déterminée uniquement par le système des valeurs de motivation, déterminées elles-mêmes par la structure des besoins et des intérêts des hommes, mais encore par le système des valeurs normatives, des principes régulateurs, correspondant aux besoins fonctionnels du système. La tension dialectique existant entre l'orientation des intérêts et les modèles des valeurs crée le dynamisme de l'évaluation et détermine les changements de l'orientation de l'activité.

Les modèles institutionnalisés de valeurs dans chaque système social prétendent à être respectés dans une certaine mesure, comme une des conditions du fonctionnement du système; c'est pourquoi ils sont considérés en règle générale comme des freins du changement social. Ces conclusions sont pour la plupart déduites du type de sociétés fermées dans lesquelles l'élite privilégiée, dans l'intérêt du „main-

tien de sa position", préfère des modèles de valeurs visant à maintenir le „statu quo". En réalité plusieurs types variés de principes régulateurs peuvent être appliqués aux différents types de systèmes sociaux orientés vers un but.

Un type extrême de régulateur est celui qui vise le maintien ou la reproduction d'un état donée du système social, indiquant non seulement l'orientation concrète, mais encore le choix des moyens et la façon dont les différentes activités doivent se poursuivre. Ce type implique le comportement traditionnel orienté uniquement vers le fonctionnement homéostatique du système et éliminant des changements qualitatifs sociaux.

Un autre type consiste en régulateurs généraux, déterminant seulement le cadre dans lequel l'activité doit être orientée et laissant la liberté de formulation des objectifs partiels et celle du choix des moyens à base de la situation qui varie. Le système de normes n'est pas strictement fixé dans ce cas, pouvant varier selon les conditions données, entre les limites fixées par des principes régulateurs généraux. Ce type de régulateurs compte même avec le changement comme un moyen de renouvellement de l'équilibre du système.

Le modèle marxiste de la société communiste est le modèle d'une société ouverte, orientée vers un but et capable de modifier elle-même cette orientation.

L'absence d'un groupe privilégié, économiquement fixé, élimine l'effet des régulateurs impliquant le type traditionnel d'activités et permet d'établir des principes régulateurs généraux qui impliquent non seulement des changements à l'intérieur du système, aboutissant au renouvellement de l'équilibre et garantissant le fonctionnement régulier de ce dernier, mais encore des changements des régulateurs généraux mêmes, libérant les changements qualitatifs de l'évolution des systèmes. C'est pourquoi la société communiste, en tant que société auto-régulatrice, orientée vers le changement du système n'a pas besoin de recourir aux conflits révolutionnaires en tant que moyens du changement social.

L'orientation différente de buts du système socialiste se manifeste par un système différent de rôles sociaux. Les rôles sociaux liés à la propriété privée capitaliste disparaissent, de nombreux rôles changent de contenu et de fonction et il se forme des rôles nouveaux.

Ensemble avec l'orientation nouvelle changent le système des valeurs normatives, le caractère et la fonction des modèles de valeurs, ce qui se répercute dans le changement de l'hiérarchie des rôles sociaux et dans l'orientation de l'activité. L'optimisation du fonctionnement du système social cesse d'être l'objectif suprême et la problématique du rapport de différentiation et d'intégration du système socialiste se pose désormais au niveau des objectifs évolutifs.

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L'orientation de valeurs, en tant que source de l'orientation de l'activité, tant qu'elle est l'expression de la différentiation des besoins humains et des besoins d'évolution du système social, constitue la source essentielle du changement social, sans toutefois décider elle-même des fonctions objectives de l'activité. Marx mettait toujours l'accent sur le fait que le résultat final de l'activité découle du conflit entre de nombreuses intentions qui s'entrecroisent, qu'il s'agit d'un groupe compliqué de parallélogrammes de forces, que la fonction objective résultante ne doit pas nécessairement correspondre à l'intention. Le rapport entre l'orien-

tation de l'activité et la fonction objective (donc entre les effets réels de l'activité)
se réalise, dans le système social, surtout par l'intermédiaire de mécanismes insti-
tutionnels qui influencent la convergence ou la divergence de l'orientation de va-
leurs et de la fonction objective de l'activité car ils rendent possible ou impossible
l'atteinte des objectifs prévus.

Sous l'aspect de la dialectique des individus et de groupes sociaux d'une part
et du système social d'autre part, les mécanismes institutionnels peuvent se diviser
en deux types: mécanismes d'adaptation, assurant le fonctionnement du système
et mécanismes d'innovation, assurant l'évolution du système. Chacun des systè-
mes sociaux dispose des deux types mentionnés, mais dans des proportions va-
riées.

Les mécanismes qui prédominent dans une société fermée sont les mécanis-
mes d'adaptation, garantissant le fonctionnement optimal du système au ni-
veau de l'homéostase; selon le caractère du système politique, ce sont des méca-
nismes recourant essentiellement au pouvoir et appliquant le principe de la con-
trainte politique ou économique, ou des mécanismes d'identification, s'efforçant
de créer, par des moyens idéologiques et en tirant un profit maximal des moyens
de communication de masse, le consensus social avec le but vers lequel le système
est orienté.

Dans une société ouverte prédominent des mécanismes d'innovation, admet-
tant le changement comme un moyen de remise en équilibre du système et admet-
tant les changements évolutifs du système en tant qu'ensemble, correspondant
à l'évolution des besoins humains. Les mécanismes d'innovation sont surtout ceux
qui rendent possible une manifestation permanente de la structure changeante
des besoins et des intérêts humains, la coordination entre ceux-ci et leur coordi-
nation avec les besoins fonctionnels du système : ce sont les mécanismes des chan-
gements des différents sous-systèmes et du système dans son ensemble. Ce sont
notamment les mécanismes des tests des orientations et des modèles de valeurs,
tels que les méthodes variées de sondage de l'opinion publique, les élections, les
différentes méthodes de contrôle, etc.

La société socialiste peut être associée au type de systèmes ouverts, orientés
vers le changement. Cependant, le rapport mutuel des mécanismes d'adaptation
et d'innovation varie au cours das étapes évolutives historiques de la société socia-
liste. Dans l'étape succédant à la révolution, notamment dans les conditions de
coexistence de deux systèmes mondiaux, c'est l'effet des mécanismes d'adaptation
qui prédomine, avec cette différence que la contrainte est surtout utilisée à l'égard
du groupe de l'adaptation à l'égard d'un système en équilibre mobile. Au cours
de l'étape suivante, à mesure que disparaissent les classes antagonistes et que s'appro-
fondit la démocratie socialiste ce sont les mécanismes d'innovation qui commen-
cent à prédominer, respectant la nouvelle différentiation d'intérêt de la société.
On peut supposer que le processus politique change successivement: du processus
imposant les intérêts par le pouvoir, il devient le processus de coordination des
intérêts dans le cadre d'une gestion scientifique complexe, proportionnelle et pers-
pective de la société. L'État, en tant qu'organe de contrainte de classe, devient
successivement un organe d'auto-gestion communiste de la société.

Pour un modèle socialiste de la société, le fonctionnement optimal de cette
dernière ne peut représenter la valeur suprême. Comme type de société ouverte,

la société socialiste doit apprécier de façon positive toutes les disfonctions qui transcendent l'état donné et compromettent l'équilibre au sens de l'évolution progressive.

A la différence du fonctionnalisme unilatéral, le marxisme ne considère pas donc toute disfonction comme un phénomène pathologique et il ne qualifie pas chaque comportement disfonctionnel de comportement déviationniste. Le système social est déterminé par la structure de sous-systèmes dont les relations ne sont pas nécessairement fonctionnelles. Cela signifie que le caractère eufonctionnel absolu du comportement à l'égard du système est pratiquement exclu, sans égard au fait qu'il aboutirait à la stagnation absolue de l'évolution du système. Le comportement eufonctionnel dans un sous-système peut avoir des effets disfonctionnels dans un autre ou bien il peut être disfonctionnel à l'égard de l'ensemble du système social. Tout processus fonctionnel a donc des effets non seulement eufonctionnels, mais encore disfonctionnels. C'est pourquoi la conception marxiste ne relègue pas les disfonctions dans le domaine de la pathologie sociale, mais les considère comme une source du changement social et, par conséquent, du dynamisme de l'ensemble de la société.

A la différence des conceptions conflictualistes, le marxisme ne pose pas la disfonction comme critère absolu au sens du postulat relativiste du changement permanent, mais il distingue la disfonction régressive et progressive. Les disfonctions régressives sont celles qui affectent le fonctionnement du système à un point tel qu'elles entraînent la désintégration et la décomposition de ce dernier et qu'elles compromettent la base d'existence même de la société. Les disfonctions progressives aboutissent à la reproduction du système à un niveau évolutif de différentiation et d'intégration plus élevé.

Le dynamisme du système socialiste dépend alors du caractère des mécanismes d'information, de régulation et de contrôle dont le système dispose afin de pouvoir généraliser avec succès les valeurs, tester le caractère des disfonctions, des changements et des innovations. Le fonctionnement non satisfaisant de ces mécanismes de tests peut entraîner une contamination mutuelle des tendances d'innovation socialistes et des tendances contre-révolutionnaires; il peut provoquer la stagnation ou la régression du système ou, à la limite, sa décomposition.

La sociologie d'orientation marxiste ne saurait négliger la problématique de l'aliénation. Respecter cette problématique au niveau sociologique, c'est mettre en corrélation permanente le système de l'individu et le système social, tout en se rendant compte que cette corrélation est médiée par des groupes. C'est dans la confrontation permanente des besoins fonctionnels du système social et des besoins et intérêts évoluant des hommes, ainsi que dans la création des mécanismes d'innovation susceptibles d'adapter le système social aux besoins humains, que réside la substance humaniste du modèle de Marx de la société communiste.

THE PLANNING AND FORECASTING OF CLASS STRUCTURE
TRANSFORMATIONS IN SOCIALIST SOCIETY

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The last 15 years have seen in Poland and in other socialist countries the growing role of planning in shaping various aspects of social life. A whole system of overlapping economic plans is constructed, including annual, 5-year and long-range plans. In a parallel process, national economic plans are broken down into comprehensive development plans for particular regions.

This development of the various levels of planning is coupled with the growth of planning theory and with the perfection of planning methods. As both theory and practice grows more complex and efficient, they become more and more sophisticated.

However, at present practice and theory of planning still seem incomplete. Suggestions are more and more often put forward for the introduction of a new kind of planning. I am referring here to *the planning of comprehensive social change*, including the process of transformation of the class and strata structure of society. It is sociologists who most forcefully support the adoption of this kind of planning, which would significantly enhance the role of planning in society.

The task of planning such complex and gradual social processes is fraught with great difficulty. However, the experience of the socialist countries shows a gradual but steady improvement in the methodology and practice of planning. They have been extended to cover new fields of social phenomena and have penetrated deeper into their structure and mechanisms of change. There seems to be every likelihood that in the future we will be able to plan social processes more complex than these we plan today.

Of course, the socialist state *has* intervened into social processes, but so far it has concerned itself primarily with direct economic planning, such as planning of investment, overall production, employment, growth of the national income, growth of the average income, etc. All these phenomena do, in one way or another, have an indirect effect on changes of social structure. However, we have never had any specific plans to influence the processes affecting changes in the nature of particular classes, in the social gap between them, and in the transformations of inter- and infra-class relations.

So far, the socialist states have undertaken direct and concrete action to influence the transformation of the class structure in two ways: (a) by abolishing the exploiting classes during the revolution, through expropriation of great private

ownership of the means of production (such as factories and land estates), and (b) by transforming (at a later time) the small private ownership of the means of production in agriculture into co-operative property (by establishing agricultural production co-operatives). As a result of these moves, the class structure of socialist societies consists of three major units: 1. the working class, 2. the peasants (either individual farmers or co-operative members), 3. the working intelligentsia. What is being suggested now is comprehensive planning of social change within the framework of the three major units of social structure and of the relations among them.

The planners have hitherto paid most attention to the socio-cultural infrastructure (e. g. the development of housing, of the network of crèches and schools, of television, libraries, etc.), to the overall wage and consumption fund, etc. It is a characteristic feature of this kind of planning that the population of the country is treated as an undifferentiated mass. Of course, all planners are aware of this simplification. A realization is gaining force, however, that this simplified method of social planning should gradually be replaced with more complex methods that will be more adequate to the social situation of different groups of people and their needs. This kind of planning is intertwined in many ways with the procedure of forecasting social structure transformations. And it is with these questions that we propose to deal in the present paper.

Questions to be Answered

Social classes are highly complex social units. First of all they are characterized by sets of attributes of social placement, such as the place in the system of production, the nature of work, level of earnings, kind and scope of participation in culture, socio-political attitudes, etc. Secondly, each class is internally differentiated.

What happens in the social structure is the end result of changes in forms o-ownership, production technology, the system of management, forms of distribuftion of goods, changes in the pattern of commodity consumption, and in the participation of the masses in cultural and socio-political life. Thus, the task of planning the development of such complex social units as class presents serious difficulties. Neither can we easily predict specific trends in the evolution of particular aspects of social structure, nor easily forecast the end result of these trends, i. e, the nature of social structure at any given time in the future. Yet, work on this task can no longer be avoided.

What are the questions that should be answered in the analysis of the evolution of social structure? The most general question is perhaps as follows: *"How will the particular, generally planned processes influence the form and development of the particular units of social structure."* This general question must be broken down into detailed ones, such as: "How will technical progress influence the professional structure of the industrial workers and management?", "How will the general increase of individual earnings and family incomes (envisaged in economic plans) be distributed among the several classes?", "How will the growing network of cinemas, theatres, libraries, etc. influence the pattern of participation in culture in various classes and strata?", "In what way and to what degree will the major

units of social structure be similar to one another and how will they still differ at
a given time in the future?"

Considering that the major units of social structure are themselves internally
differentiated, all of these questions should also refer to each of the smaller socio-
professional groups or strata. Until now the planners devote insufficient attention
to what influence a given economic policy may or should have on the situation of
the several classes and intra-class group (a good example of "over-all" planning
could be the setting the general increase of the consumption fund for the next five-
year period, the growth of expenditure on housing, or the change of the commo-
dity structure of consumption in all families). In such cases the object of analysis
and of planned policies are such units as "the population of the country", or "the
urban population". In Poland the argument is gaining force that the economic
and social policy should take into consideration that "the population" is internally
divided into classes and strata of differing living standards. The planner should be
aware of the different needs of these classes. It is necessary to promote consciously
and efficiently the desired changes in the class structure.

Certainty and Uncertainty

Planning and forecasting of the situation in the particular units of our class
structure grow more difficult with the time-span of this operation. If we forecast
and plan developments for the next 15 years, that is for 1985, we are in a better
situation than if we plan for the year 2000, which is 30 years from now. We have
a fairly vivid picture of many elements of the 1985 situation and there are more
developments that we can be quite certain will occur. This is because we have a ge-
neral knowledge of the present situation, which cannot be radically changed in 15
years, and because we have an overview of the basic targets of economic plans. With
regard to the years 1985-2000, however, the "area of uncertainty" grows consi-
derably. Let us mention just a few of the difficulties in forecasting more distant
future.

Technical progress is not fully predictable and it has its share in determining
the professional structure of the urban population, as well as the division of labour
in agriculture. Work and professional position in turn determine significantly other
social attributes of individuals.

Changes in the organization of production and social life — this is another field
which influences the social situation of individuals and of whole social groups. The
degree of organization of social life undoubtedly grows and this results in the emer-
gence of new social groups and influences the whole professional structure and
types of social attitudes.

Changes in the system of remuneration for work and of social benefits — these
fields, too, seriously influence the intensity and nature of social differentiation. The
experience of socialist countries shows that the search for new systems of remune-
ration for work and social benefits will continue. There may be manifold causes
and effects of this process. On the one hand, the desire to introduce stronger incent-
ives for productive labour may tend to promote larger wage differences and, on
the other, the trend to increasing the social consumption fund may result in dimi-
nishing differences in real living standards between families from various classes.

Changes in the mass media — these also influence the possible forms of social differentiation or the rate of their disappearance. The mass media influence the opportunities for transmission of intellectual or aesthetic messages to various groups of people. In the future they may create even greater and more diversified possibilities for spreading education and culture among the adults (e. g. those who could not get an education in their youth) and may revolutionize the system of education for the young, removing whatever obstacles the place of residence may now put to access to education and culture.

Changes in the forms of political life — these may exert basic influence on various fields of socio-political activity of individuals. The greater prerogatives of self-management organs, local government, trade union and cultural organizations will create a new situation, but one that cannot now be clearly described or defined.

Changes in the system of values will bring in their wake changes in the prestige of particular occupations, jobs and posts and may influence the intensity or disappearance of the whole prestige differentiation of society. It is very difficult to predict value system changes and their rate. On the one hand, they depend on the objective conditions of life and work and, on the other, on autonomous cultural trends.

And yet, are we doomed to total failure in our attempt to forecast the developments in the period 1985-2000? Is it nothing but crystal gazing today? The answer, we think, is no. First of all there are certain "constants" of the socialist political programme, connected with the Marxist vision of the evolution of society; secondly, some general tendencies can be predicted in spite of the difficulties in presenting a detailed picture of future development . . .

Planning and Forecasting

In our examination of the evolution of the class and strata structure we must bear in mind the following three groups of factors on which this evolution depends:

(I) the specific point of departure from which we begin to view future changes: this is the "legacy" of the previous period, which exerts very significant influence on future stages of the evolution;

(II) planned activity oriented towards influencing social life and the planned and unplanned results of that activity;

(III) processes independent of our planned activity, which we will call spontaneous here: they appear independently of what we may be doing (this group would include, for example, the birth rate in particular social classes or the imitation of foreign patterns of consumption).

We come here to some general problems of planning and forecasting. Two questions one can rise here: what do the two kinds of scientific activity have in common and what are the differences between them? What role do they play in our studies of class structure transformation? An attempt to answer these questions would extend beyond the scope of the present paper. However, we should bear in mind the basic differences between planning and forecasting and the links we create in undertaking them.

To plan is to set highly practicable undertakings as binding targets for some groups. In doing so, we establish the targets, provide the means and resources

necessary for that purpose and name the group responsible for the implementation of the plan in a specified period of time.

To forecast is to describe future situations regardless of the kinds and causes that will account for them and thus resulting both from planned activity and independently of it. Therefore, forecasting runs a much greater risk of error and uncertainty. We must be aware, however, that in planning, too, there are several degrees of the planner's influence on the course of events, and the final result. The planner can never be totally sure of the final outcome and plans are rarely, if ever, error-free. In economic planning, for example, it is much easier to foresee the expenditure and time needed for the completion of planned investment than to tell when labour productivity will rise or when the commodity pattern of consumption will change, though practice has shown that even in the former case there may be large discrepancies between plan and reality.

In any case, planning covers processes that are at least controllable and in optimal conditions can be fully manipulated. By "controllable" I mean that a process can be shaped to some degree on the basis of knowledge of the laws governing it and the use of effective and adequate means of intervening into the process. By "capable of being manipulated" I mean that we can either modify or remove a phenomenon altogether. If we regulate a river with a system of dams and embankments, we control it. If we abolish some forms of ownership and introduce others, we manipulate them.

The concept of forecasting is being used in at least three meanings:

(I) as prediction of the outcome of a process independent of planned activity (a "spontaneous" process which the planner "leaves alone", either because he does not want to, or is not able to influence it);

(II) as prediction of the outcome of activity provided for in a plan, but somehow uncertain, e. g., because of the intervention of "outside factors" which cannot be controlled;

(III) as prediction of a process that is partly planned and partly spontaneous.

In the field of social phenomena the third type of forecasting seems most significant and this is what we are concerned with here.

This type also points to the peculiar nature of relations between planning and forecasting. At the same time it points to broader links between a diagnosis, a plan and a forecast.

In social life, long-range thinking usually amounts to forecasting of the third type. Before we can construct such a forecast, we should (1) study planned activity which will influence the future nature of the phenomenon under consideration, and (2) study the influence of processes which exert such influence, but are not covered by the plan. Therefore, before a forecast can be constructed we must arrive at a precise diagnosis of the present state of affairs (which stresses the role of research). However, if we are thinking of forecasting the situation in several points of time in the future, then the forecast for 1985 must be considered as a quasi diagnosis which provides a basis for a forecast of the evolution during the next stage, i. e. in 1985-2000.

The Need for Variants in Forecasting

Let us assume for the moment, as some authors do, that the evolution of social structure consists of the evolution of two related sub-systems; one of them is the interconnected aggregate of attributes of objectives class placement, determined to a high degree by the level of technology. The second sub-system is an aggregate of phenomena which go under the general name of the "life-style".

The dynamics of those sub-systems raises the problem of (1) the independent evolution of each of the two sub-systems, (2) interconnections between them in the process of development. We will confine ourselves to a discussion of only few such problems, which will serve as an introduction to a consideration of variant forecasting.

The following questions might be posed here: Is it easier to guide (with the use of planning) the development of technology or of life-style? Which of the two fields of planning is more accurate? Which of the two requires a larger number of variants?

It seems easier to guide technical progress than the evolution of a way of life. It is also true to say that technical progress is a universal phenomenon and the technology available to all highly developed countries must be the same. This suggests that industrial societies must have quite similar organizational systems and professional structure.

And here we come to social problems of great significance. It is true, of course, that all countries strive to use the most advanced technology, which is also most efficient, since the technical progress constitutes the mainspring of labour productivity growth in the world today. It follows that the less developed countries will find it easier to predict trends of technical progress than the leading countries, since the former will in one way or another imitate and copy the technology of the latter. We may conclude then that there will not be many variants of technical development in countries to catch up with the technological leaders.

There is much that is right in the above reasoning and in the coming 15 years this is most probably what things will look like. However, very important guestions arise: "Will not the future development of science and technology enable the developing countries to catch up quickly with the leaders?", "Might not the new vistas opened up by the further technical development create new social environments in which people will use technology?", "Should we not, therefore, use our imagination to invent new future organizational systems and social structures in which the future still more developed technology will function?".

If this came about, it would be possible in the future to consider various variants of technology available to society in terms of (i) ensuring high productivity of labour, (ii) favouring such an organization of labour teams and whole productive aggregates as would create the best conditions for the creation of a new kind of social relationships.

Apart from the problems discussed above, we should give more serious consideration to the problems that have so far been dismissed with glib, but non-too-profound statements. These are questions of the necessary difference between the future social structure of socialist societies and the present structure of the most developed capitalist countries.

The philosophy of "technological determinism" is sometimes subconsciously accepted even in socialist countries, giving rise to views that a given type of techno-

logy must necessarily be combined with a specified organizations of productive teams, a specific system incentives, and so finally, a given distribution of the basic attributes of social placement. This type of reasoning leads sometimes to the expression of very far reaching views that the next thirty years will unavoidably see the growth of social differences in socialist countries because there must appear a growing differentiation of skills and the degree of influence on economic decision-making must also be sharply differentiated, these are going to be followed by growing differentiation of remuneration for work. It is a kind of elitist forecast. Such types of forecast can be found in the discussions going on in Poland at present. These discussions are stimulated by the new economic policy directed toward technical modernization and "selective economic development". In connection with these discussions one question seems crucial. It is the question of whether a given level of technology and the requirements of its functioning so determine the organization of work in society and the system of rewards that just one pattern of the distribution of objective social placement attributes is possible. A negative answer to that seems not only socially desirable. It seems also plausible in view of what we said above about the growing range of possible effective social solutions on the basis of the same technological level. We need only to initiate the systematic inquiry into how with a given type of technology the question of social differentiation can be solved differently and then to choose from among the theoretically possible solutions those which will both favour the introductions and spreading of the most sophisticated technology and cause no adverse changes in social differentiation.

Thus, variant forecasting of future policies is not only important as a means of protecting ourselves against the surprises technical development may bring. It is also important as a means of protecting ourselves against unforeseen social consequences of that development. This involves not only understanding of what may happen in the future, but also protective action to prevent the undesirable developments from happening spontaneously. Speaking most generally, an efficient and rationally organized technology need not necessarily lead to negative social consequences, including the deepening of social differentiation. In forecasting the evolution of complex on the whole some of its component processes are more, and some less predictable. The basic problem of forecasting is to provide an accurate overall description, to construct a "pattern" of the interdependence and interactions of the particular elements. This ties in with the problem of predicting the variants of all future patterns. Here we touch upon the problem of the connections between the development of technology and the formation of the new style of life.

The following questions arise: "Is a future life-style a more or less predictable phenomenon than technical progress? What are the connections between the patterns of consumption of material goods and the more inclusive complex phenomenon called the style of life? What prospects open up in the future for and what are the obligations of what might be called the 'central social planner'? Does he have more or less variants to choose from then the 'central planner of technology'? "These questions merely scratch the surface of a great number of problems that require solution. Some of these were taken up in recent public debates in Poland. I mean here a debate on suggestions put forth by some economists and concerning the desirable reshaping of the commodity structure of consumption,

Some of these suggestions seem to verge on oversimplification which should be avoided. First, the assumption that the change in the consumption of material goods automatically incurs the change in the style of life. Second, the conviction that both the pattern of consumption and the style of life are easily shaped by planners. Third, that it suffices to establish one uniform pattern of consumption for the whole population and then to introduce it among the people.

It is necessary to take into account that consumption of material goods is just a part of the general consumption (which for sociologists includes also the so-called "cultural consumption" and of the "style of life" in general (which includes among others some attitudes and social relationships). The planners can select given technology for the industry and perhaps they can select, with some limitations, the pattern of consumption of material goods by the manipulation of production and supply. But they cannot select arbitrarily the society's way of life. Maybe this is overstating the case, but this difference is not always clearly seen. We plan technical development directly, but changes in the style of life can be planned only indirectly. Planning of technical development is more efficient and accurate because the planner can weigh all the options, make all the decisions which influence the implementation of his plan. The planning of changes in the way of life is much more failure-prone because the implementation of such plans depends on millions of individuals with their own preferences and the power to determine their own lives.

Moreover, the existence of the class structure is expressed among others in the different patterns of consumption, and more generally, in the different ways of life. Thus, what we really need is not a one unifed model of the evolution of the population's style of life. We need the specific models of evolutions of the commodity consumption patterns and life-styles in the specific classes and strata. These models should be constructed on the basis of a thorough diagnosis of the present situation and scientific prognosis of the plausible future trends. These models, of course, should imply the gradual diminishing of the present class differentiation of the consumption patterns and life-styles.

The above said is not to create the wrong impression that nothing could be done in the field of planning and forecasting the life-style. The intention was only to warn against the oversimplified attitudes toward planning and forecasting the changes in the patterns of consumption of material goods and in the style of life in general. It should be emphasized, however, that with the advent of a more developed technology, a higher living standard and more widespread participation in various forms of cultural life, the question of shaping the life-style will acquire primary importance in the future. If any further suggestions can be put forward today with respect to forecasts in this field, I would attach the greatest importance to conscious resistance to the kind of philosophy I am inclined to call "general civilizational determinism".

As in the case of "technological determinism" this can be effectively done by working on the variant of the future way of life. The life-style is a complex whole with manifold internal structural interconnections and external determining forces. Planning changes in it requires the application of a wide spectrum of means and must assume and permit various results.

From the point of view of the socialist ideas we need only three constant trends in these variants: the growing equalization of objective living conditions, the enlarg-

ON THE THEORY OF SOCIAL CHANGE AND SOCIAL RELATIONSHIPS

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Here we will present a very simple conceptual scheme in order to distinguish different levels usually confused in the analyses of social change. It is an incomplete scheme because we will define units more than characteristics of those units. We will use it as a broad guide in our analysis of different works about social change.

A few basic concepts

Objects: two types, human and non-human.

Unitary act: a human individual in movement between two shifts of the direction of his attention. Since attention is fundamental in the relationship between individual and environment it serves as our basic criterion to divide the individual's behavior into discrete units. The same act may have not only one but many relationships with other acts or units.

Unitary interaction: two interconnected acts of different individuals (this is a shortened definition). It may be direct (i. e., face-to-face) or indirect interaction. The interconnection between two acts may be indirect, if the acts we are cosidering are mediated by non-human objects, except air, by other individuals or by the same individuals in other moments of time. Our concept does not imply the physical presence of the interacting individuals in the same physical space.

Degree of the interconnections between the acts: the term "extension of the interconnections" of an act refers to the number of acts to which an act is interconnected. The term "intensity of the interconnections" of an act refers to the degree to which a given act modifies the acts with which it is interconnected. Both concepts, taken together — intensity and extension of the interconnections — describe in a sufficienty approximated manner the degree to which an act is interconnected to other acts.

System of interactions: a set of unitary acts, belonging to at least two individuals such that the intensity and the extension of the interconnections between them is noticeably larger than the interconnections with other acts, and the temporal segments of non-human objects that mediate such interconnections to a substantial degree, including their interconnections and interrelations, constitute a system of interactions. This definition is broad enough to include all the types of groups, collectives, etc., that are treated in sociological literature.

Possible relationships: As we understand our units in time, we do not speak only of an individual, but of an individual segment, i. e., the individual between two points in time, and so on. We may show the following possible relationships:
   a. Individual segment — individual segment.
   b. Individual segment — environment.
   c. Individual segment — non-human object segment.
   d. Non-human object segment — non-human object segment.
   e. Individual segment — system segment.
   f. Non-human object segment — system segment.
   g. System segment — environment.
   h. System segment — system segment.

Inclusivity relationships (*relations part-whole*): we say that a unit, i. e., individual, non-human object or system, is included in another if all the component acts or object segments of the first belong to the second, but there are components of these second units that do not belong to the first.

Conditioning interconnections: complex interconnections between units in movement that as a whole are necessary for the explanation or prediction of the features being studied.

Dominant units: a unit is dominant in respect to another if it conditions this other in a higher degree than vice-versa. The second unit is subordinated.

Material and ideal connections: the material interconnections may be ideally reflected in consciousness or acquire a symbolic form, which "represents", "expresses" etc. something else.

Denoted units: units that are the referents of the ideal reflections.

Interpreter units: units which directly produce or interpret the ideal reflection.

Gratifying units: units that satisfy socially conditioned human needs.

Instrumental units: units that serve as a means of obtaining satisfaction of the needs in the future.

This is a simplified form of our conceptual scheme, but it is sufficient for understanding our analysis of some works on social change.

For reasons of space we *cannot* give a complete presentation of our scheme, examine the works at a very deep level nor give a summary of the author's ideas. We will directly discuss their ideas and we hope not to distort those ideas.

We will analyze only a few but very different studies of social change, utilizing our concepts to distinguish different levels of complexity of social reality. We will begin with Dahrendorf.

Aspects of class situation

We will briefly criticize some strategic ideas of Dahrendorf (Dahrendorf, 1959).

The obvious thing that appears at first analysis of the ideas of Dahrendorf's paradigm is that he always refers to social positions of individuals and aggregates of individuals and not to the relationships between systems of interaction. The relationship (management)-(factory) is one between a subsystem: management, with a system: factory. This inclusive relationship modifies the relationships between individuals, i. e., it is not the same to be a subjected individual of the management-subsystem, as it is to be a subjected individual in a working group. Also

the norm and values may change by this different pertinence to systems of interaction.

Another thing related to the incompleteness of Dahrendorf's conception is the relationship between imperatively coordinated associations (special types of systems of interactions), i. e., it is not the same to be at the top of a small and subordinated enterprise as it is to be at the top of a large and dominant enterprise.

We have to refer to "social position". It may be characterized with the help of our concepts. Without going into details, we may characterize social position as the conditioning that affects the relationship of an individual with every type of unit, that results from a basic relationship between the individual (more exactly, his temporal segment) and the system of interaction to which he belongs. That is, the effects of the relationship (individual segment)-(segment of the system of interaction) upon other relationships or the same relationships of the same individual.

We have to refer to an implicit contradiction in Dahrendorf's formulations. He argues in the sense that a position in whichever imperatively coordinated association defines the class position of the individuals. This presupposes the consideration of different imperatively coordinated associations on an equal basis. However, he speaks of "legitimatio" or "prevailing order", and what is this if not a recognition of the fact that we cannot confine the problem of classes within the boundaries of imperatively coordinated associations. And not only this, but this terms put on a different basis associations as the State-system and an enterprise-system. The State guarantees, at a "normative", values, laws, etc., ideal reflections that imply a commitment to actions and at a factual level, i. e., threat of "persuasion", i. e., the use of force, the prevailing order (including relationships involving individuals and enterprises). In addition to this, in the Nation system (that includes the mentioned above) there is only one State but many enterprises. All of this implies that we must not consider the imperatively coordinated associations as a general category, but specify the position of these associations within the wider Nation-system, see their relations with other units, not only individuals or aggregates of individuals, and between them. In this respect our distinction of systems of interactions of several inclusive orders, i. e., inclusive relations, may help.

The term "objective interests" does not only refer, in our meaning, to factual relationships with gratifying or instrumental units, but also to the objective features which open the possibility of reaching better relations with gratifying units, for the incumbents of social positions. Here we have a concept that refers to a complex relationship between positions (itself a complex concept) and given possibilities of relationships. Antagonic interests imply that what is good for some positions is detrimental for others, and it is not a simple question of subordination.

With respect to this, if we understand authority as "the probability that a command with a given specific content will be obeyed by a given group of persons", we cannot understand why authority always implies antagonic interests. An authority relationship in which it is better for some individuals to obey other individuals, it is perfectly conceivable if the first direct or control the others for a better fulfilment of all the members of an association. Of course, this is so only if the "subjected" individuals have the possibility of influencing and determining the behavior of the dominant individuals in the long run, although they may be subjected in the short run. We propose to refer to social power as the capacity of an aggregate

of individuals occupying similar positions to modify the systems of interactions to which they belong or to which they relate, in order to obtain a better fulfilment of their interests, as opposed to the interests of others.

In our opinion Dahrendorf confuses authority with social power.

In this respect we think that the concept of property, rejected by Dahrendorf, merits special consideration as a source of antagonisms and as a synthesis of many different important relations respecting the problem of classes.

In the characterization of property relationships we have at least two human units that belong to the Nation-system: one may have a specific relationship with the gratifying or instrumental unit (may use or dispose of it) and the other is excluded from this relationship, i. e., it is not only a relationship with a unit, but also a relationship between the participating unit and the excluded unit with the State-system of interaction intervening. Property relationships always imply a political system that protects them, i. e., imply a position in a Nation-system (that includes the State-system in a relevant place) or even in the international system.

But as property implies the possibility or the exclusion of a relation with a gratifying or instrumental unit, it is the most important basis for antagonic interests.

Some patterns and conditions of social change

The work of N. J. Smelser (Smelser, 1963) brings out another aspect of social change. We think it is easy to find a linking point between certain forms of collective behavior, i. e., value oriented movements and class interests.

If we consider a changing type of Nation-system: 1. The opposition of the interests of the participants may become sharper in different degrees in time, and 2. The degree of consciousness of these antagonisms may also change. We think that here is the main source of Smelser's strains in social structure, at least regarding their political repercussions.

But it may occur that when an aggregate of individuals or system of interaction confronts a new ill-defined situation, their members, i. e., interpreter-units may not have specific ideal reflections that effectively guide their behavior and they utilize only very general ideal reflections. That is, as a result of the confronted new situation there may be a gap between the general ideal reflections and the specific ones.

We think that this characterization of "generalized beliefs" retains the advantages of that of Smelser. We must emphasize again that we are not dealing exclusively with the relationship individual-environment, but also with the relationship (individual)-(individual), (individual)-(system), (system)-(system), etc. The denoted units of those ideal reflections, i. e., "beliefs", may be any of those relationships.

Following Smelser, in order that a belief become a "generalized belief", i. e., that the same or similar ideal reflection be in the minds of the participants in collective behavior, there must be conditions of "conduciveness", i. e., that the generalized belief may spread. We also agree with Smelser regarding the role of the "precipitant factor".

But from our point of view:

1. The main sources of value oriented collective behavior in class societies are class antagonisms. They are the sources of "strains".

2. Although collective behavior may show some forms of non-adaptive behavior, this does not mean that it is a negative phenomenon. It may be a necessary step in the change of a society.

3. We cannot suppose that a change of the structure of a society must always involve a very disorganized transition. The experience of other revolutionary movements may help to define the specific ideal reflections, which serve as a guide to individuals and systems of interactions.

4. The source of contradictory ideal reflections are to some degree the material antagonisms of the society.

But we must also take into account that no revolution is produced without the participation of a type of organized systems of interactions, i. e., parties. Revolutions also need the participation of the masses and for this reason in the social movement, driven by parties, there may be forms of collective non-adaptive behavior. Of course, this does not imply a negative evaluation.

We will briefly analyze the main hypotheses of Eisenstadt (Eisenstadt, S. N., 1966). We believe that Eisenstadt's principal hypothesis reflects some important features of Social Change, i. e.:

1. In more developed countries there is a greater institutional differentiation, i. e., of some institutional systems of interactions into two or more systems.

2. This, in turn, requires that the central, i. e., dominant institutionalized systems of interactions do not become an obstacle to social change. That is, we cannot only refer to relationships between individuals inside systems of interactions, but also to relationships between different systems of interactions, i. e., dominant and subordinated ones.

But we must emphasize that:

1. Eisenstadt utilizes the concept of modernization, which implies a type of development that can be explained by the features of a Nation-system. This also presupposes that different societies lean by their intrinsic features to a society that is common to capitalist and socialist countries. We contend that we cannot analyze the social changes of a Nation-system in isolation of the more inclusive, i. e., international systems. Many fundamental features of "underdeveloped", i. e., nonmodern societies, have been produced by their very relationships with "modern" societies.

2. It is not the same to be at the top of a dominant system of interaction as it is to be at the bottom. Hence the importance of the concept of social position not only in respect to the positions of the elites.

3. The governing elites in capitalist countries are but a sector or representatives of the capitalist class, defined by their position in the property relationships. Governing elites are always a proper strategic subsystem of or related to the dominant systems belonging to the Nation-system.

4. The governing elites may "absorb" by utilizing their power many changes in the subordinated systems, but there are limits for the absorption of changes, i. e., elites cannot act against their interests unless they are forced to do that. For these reasons some types of changes signify not only changes in the elites, but also or principally changes in property relations.

Finally, we shall analyze in a very synthetic way some implications of the analysis of a work by R. Arismendi (Arismendi, R., 1962). This work is oriented to explain social change not only at the level of a Nation-system, but also the relationships of different Nation-systems, i. e., dominant ones, distort the development of the subordinated ones. But, in this case, he refers not only to the relationships of both types of systems as a whole, but of:

1. The relationships between dominant subsystems within dominant Nation-systems, i. e., big economic enterprises, in their economic relations to subordinated Nation-systems. The dominant elites within the dominant enterprises in dominant Nation-systems are in a relationship of domination not only within their own Nation-system but regarding other capitalist countries. We must emphasize that Arismendi's work is concrete and our analysis is abstract. For this reason we may be distorting Arismendi's ideas.

2. As these dominant elites within dominant capitalist Nation-systems have in view only their profit, they deform weaker economies, i. e., those economies have not the necessary harmonious organization in order to reach a sustained development.

We have dealt with different studies around social change that point out different aspects of these matters: that of Dahrendorf and Smelser of a very abstract level and that of Arismendi of a more concrete level.

Tentative general conclusions

1. We must distinguish at least the following levels: international system, Nation-systems, State-system, enterprises, subsystems within State and enterprises, individual positions.

2. We must consider at least the following relationships: (International system)-(Nation system), (Dominant oligarchical international subsystem)-(Subordinated nation systems), (Dominant nation system)-(Subordinated nation system), (Dominant international set of organized or semi-organized class positions)-(Organized and non-organized set of subjected class positions), (Different sets of National dominant class positions)-(Different sets of national subjected class positions), (Elite subsystem)-(Nation-system), (Elites subsystem)-(Organized and non-organized set of dominant class positions), (State-system):(Human unit)-(Gratifying or instrumental unit)-(Human unit), (State system)-(Enterprise), (Dominant enterprise)-(Subordinated enterprise), (Enterprise)-(Enterprise), (Dominant subsystem within enterprise)-(Subjected subsystem within enterprise), (Individual)-(Nation system), (Individual)-(Enterprise), (Individual)-(Sub-system within enterprise), (Individual)-(Individual), and so on.

We have to emphasize that the lists of levels and relationships enumerated above are incomplete and that we must study *all the relevant different levels and relationships involved* (which varies from case to case) *in the most pervasive societal changes, if we want to understand the particular process examined as a totality*.

3. Selected hypotheses: (a). There must be adequate modifications in the "center" (dominant systems) or in the elites in order to absorb the changes in the rest of the Nation-system. Relationships involved: (Dominant systems of interaction within Nation system)-(Other systems belonging to the Nation system), (Elites)-(The rest of the Nation-system). (b). Hypotheses about the sources

of class interests and about their importance for the specification of the charac-
ter of Nation-systems. Relationships involved: Property relationships as basic
ones, relations between the positions of the individuals, dominant and subordi-
nated enterprises, etc. (c). Antagonisms in class interests are the main source
of politically oriented collective behavior. Relationships involved: (set of class
positions)-(Social movement of the class: organizations of the class, i. e., organiz-
ed systems of the class, and their followers). Forms of "non-adaptive" behavior
may arise in revolutionary collective behavior that may be reduced because of the
experience and hability of politically revolutionary parties. Relationships involv-
ed: (Components of social movements: individuals, systems of interactions)-
(Other components), (Movement as a whole)-(Confronted environment): lack
of specific ideal relfections, (Revolutionary parties)-(Revolutionary movements).
(d). Profit oriented dominant elites of dominant capitalist Nation-systems de-
form the economy of subordinated Nation-systems. Relationship involved: (Pro-
fit oriented international elites)-(Subordinated Nation-systems).

We do not consider that the hypotheses are correct or exhaustive. We want-
ed fundamentally to show the possibilities that a conceptual analysis reveals by
distinguishing different levels in social processes, even in this very rudimentary
form.

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SOCIAL ASPECTS OF SOCIAL PROGNOSIS IN A REGIONAL AREA

MANFRED KRÜGER

GDR

The prognosis of the developed social system of socialism can, in addition to many other aspects, also be determined territorially. This is not only possible, but also necessary for the work of regional managements. Every social prognosis also implies prognostic ideas under sociological aspects. Thus as a basis for planning it is determined regionally and sociologically.

The complex understanding and valuation of all essential social processes concerning the formation of a social order in a regional area (town district or country), which is measured with definite objects (Zielvorstellungen), is important for the scientifically founded shaping of a regional area.

With all the conformity of objects (Zielvorstellungen) for the whole territory of the GDR it is necessary for the sociological prognosis of a regional area to work out those determining factors and regional characteristics which correspond to the general laws of development and help carry them through.

The sociological prognosis of a regional area in the first place deals with the social sphere affecting economic-technical prognoses. Starting-point is the scientifically founded social prognosis.

One of the aims of sociological research consists in the discovery and explanation of those forces and their structure which support or delay the realization of the objects and therefore must be controlled. They are controlled by creating conditions which for their part result in behaviour (Verhalten). Moreover, it is always necessary for us to know the next possible steps towards our object. In this sense sociology is an auxiliary science for leading activities. We want to help prepare decisions and not to be restricted to checking afterwards if the decision was right or not, if it supported the object to the desired extent. Thus it is important in the regional district to comprehend in advance those social processes which with an almost positive probability one day will have to be decided by the respective managements.

Though sociological research nowadays in the first place still deals with the actual behaviour (Verhaltens-Ist-Stand), we must start from the fact that the knowledge of the actual condition (Ist-Stand) is the prerequisite to Marxist-Leninist sociology on the whole, that it is based on this knowledge. Only in this meaning sociological researches can be socially effective and can give the respective managements data for decisions.

Besides it is our advantage that everywhere in the GDR, even in every regional district, already today there are ways of behaviour, teams, plants, managements and social processes which for the whole GDR—or for a respective regional area—still in general are part of prognosis.

For example already today in some co-operative farms there are developing or already taking place social processes which in 6 or 8 years will be characteristic of the agriculture in the GDR. Here we have to investigate the following problems: will it be possible to explain a process of social development which purposively leads to the formation of a socialist human community according to the social socialist order founded by historical materialism; to what extent will that be possible; what controlling mechanisms can be used; what forces must be considered and supported.

The objects for a district, for instance, deduced from the total prognosis, in the technical-economic sphere are mainly reflected in the prognoses of those economic branches which are characteristic of the district. The sociological method of proceeding is deduced from the central point of the developed social system, from the economic system. For the geographical and regional area of Mecklenburg, for instance, the relations between town and countryside are characterized in another way than — for the purpose of comparison — in the mainly industrial area (industrielles Ballungsgebiet) of Halle — Leipzig — Merseburg. Only from the complex sociological view the difficulty of working out technical-economic prognoses, which are to be socially relevant, can clearly be seen. For the coastal district of the GDR, for Rostock, in addition to agriculture and foodstuffs industry the branches of sea-economy in the broadest sense are important. Certainly sea- and harbour-economy is a branch which is characteristic of the district, but for the whole GDR it is only of a moderate extent and can only conditionally be generalized.

What social problems are to be expected or can already be seen?

In hull construction, that means also in the installation of social accomodations such as single-berth cabins, lounges, air-conditioning plants, shipbuilding in the GDR influences the level of international development. That is all right, but it doesn't solve all social questions. The increasing container traffic will not only reduce the lay days in foreign ports but also in home ports. A cargo ship can be discharged and loaded in 12 hours. But the majority of seamen in the GDR don't come from the coastal district and under the still prevailing conditions cannot go home during the lay days. But sociological investigations have proved that all factors connected with the home port are very important for the working contentment of our seamen, for the improvement of the working and living conditions of the workers on land must affect the life of the seamen in the same degree.

In this way a general social process and a complex sociological view require possible corrections of well considered and well founded technical-economic prognoses. All our effort, however, is devoted to improving the living conditions of the people and this aim sets up the standard. The socialist order of society proves to be the order which is adequate to the scientific-technical revolution and makes it impossible to reduce the problems of mastering the scientific-technical revolution to mastering the social results in the completely different social orders. Here the attempt of convergency must fail.

The sociological prognosis in a regional area as a basis for a scientifically found-ed planning of social conditions and relations in the end involves all spheres of social life. Nevertheless there are some main problems, some of which I want to refer to in the complex social connection.

Often it is only a case of putting questions without the possibility of indicating ways of solution. We partly consider the value of sociological research even to be putting questions. Answers can certainly only be found in co-operation with representatives of other branches of science, for Marxist sociology requires united efforts of different sciences.

What problems offer themselves? All problems connected with the demogra-phic development belong to the fundamental considerations for a sociological pro-gnosis of the regional area. Strictly speaking they can hardly be called "prognosis", for those people who will be incorporated in the working process in 1980 are alrea-dy living; and those children who will come to school from 1980 can very precise-ly be calculated on the basis of other demographic data. But the natural develop ent of the population with regard to age groups, according to precalculation of sta-tistics, proves to differ from the balancing of working people (Arbeitskräftebilan-zierung). Therefore a shifting (Wanderungsbewegung) must be assumed which meets the demand for working people in the mainly industrial areas (Ballungsgebieten) and moreover considers the displacement of workers.

With that there are certain problems:

1. The shifting is prognosticated with regard to districts, age groups and eco-nomic branches. Moreover a considerable immigration from other regional areas is assumed. The question how this prognosticated shifting can be controlled is to be answered.

2. The structure of the working people needed by 1980 must correspond to the cualification and vocational structure of the working people to be displaced in the respective district as well as to the structure of possible immigrants from other districts. Thereby it is important to secure the educational advance (Vor-lauf) mainly with regard to the restraining of working people to be displaced. There-by it must be considered that this general shifting of population groups, which in this age and sex structure in the end correspond to the average of the district, for the time being and at the beginning of the shifting mainly involves male citizens of the GDR.

3. This raises a problem above all in the mainly industrial areas.

The economic branches located in Rostock for example in the first plase re-quire male working people. But as one of the objects of our socialist society con-sists in a high proportion of working women, because the development of the per-sonality is primarily influenced by the character of work, all prognostic deliber-ations must consider this factor by creating jobs which enable women to work in areas such as the town of Rostock. Part of this problem is the answer to the que-stion by what factors women and especially mothers of children of school-age can be induced to work.

In addition to the problems resulting from the demographic structure there are other socially effective factors which must be taken into consideration. So it is continuously necessary to adjust the demands on pupils at school as well as on students at universities and technical colleges to the prognostic requirements of the economic branches, especially in the fields determining the structure. That

concerns the content of education, the knowledge of methods, the way of thinking and working as well as the number of people to be trained. Even in the regional districts this factor shows that students cannot only be admitted to universities or technical colleges from polytechnical schools. If learning and qualifying are to be a permanent process, a continuous attitude, to a great extent this can only be realized with the assistance of the plants in the regional districts and their super-ordinate organs.

In an industrial and agricultural district such as Rostock, first of all sociological investigations deal also with all questions which refer to the formation of new socialist relations between town and country. It is especially important in the period of prognosis to advance in the abolition of the essential differences between town and country and to discover all forces operating in this direction. One of these questions is the problem of working women in the countryside. Experiences show that in the same measure as mechanization and partial mechanization continue in agricultural production, first of all women drop out of the working process. In the period of prognosis, however, the majority of these women will have attended our polytechnical schools for 10 years. Such a "solution" does not correspond to our social objects. These questions involve also all problems which arise with the creation of central settlements and can only be solved in co-operation with our agricultural sociologists and other social scientists.

The trend towards urbanization cannot be stopped, but it can effectively be influenced and controlled for the benefit of the whole society. For a relatively small area with a manifold opening up by traffic there are peculiar problems in this respect. We see our task in creating urban conditions in the countryside, but of course only in centres. A more detailed investigation is necessary for finding out in what way and by means of what controlling mechanisms this can be achieved. But it will not be possible to solve this problem without the conscious co-operation and co-determination of the people of the GDR.

Within the towns of a regional area there are still many problems to be solved. The Socialist Unity Party of Germany, the leading power in our society, with regard to these problems demands to build the town within the town. The well-being of the citizens, their relation to their town essentially depends on the interplay between old and new buildings, between modern high buildings and mediaeval gabled houses, corner-pubs and modern restaurants. The often soulless suburban quarters, rightly called "sleeping-quarters", are no solution. Therefore in the complex planning of town centres and residential quarters take part architects, artists, social scientists, among them sociologists and physicians, and they stand up for their plans not only against the people's representatives, but also against the population. Therefore sociological experiments are undertaken in the regional area such as the construction of a large living-unit (Großwohneinheit) and of buildings with variable flats, as well as the selection of applicants for flats. The allocation of flats in a quarter with new buildings, for instance, almost everywhere leads to a disproportionate age structure. In the first place young people with small children moved into these flats. The average age in such quarters with new buildings is, for example, 12 years. That means, in the period of prognosis an enormous increase of young people is to be expected, which will lead to problems of a special kind. But at present there are not yet any investigations in a way in which the questions connected with this problem can effectively be controlled.

Not only for that reason problems of the occupation of residential quarters in general belong to the sphere of sociological considerations. Also the following questions belong to this sphere. In what way is the employment of women stimulated by industry being located near to the residential quarter? Will the qualification be carried through in the plant or in the residential quarter? How is the increasing leisure time used in the residential quarter, what is required for off-time entertainments? How can the way-time-relations (Wege-Zeit-Beziehungen) between place of work and residential quarter be optimized? These are only some questions. With regard to hobbies, physical culture and sports there are not yet any prognostic conceptions for a residential quarter, as far as we know.

The formation of the developed social system of socialism in a regional district is of a complex nature. The responsibility of the people's representatives as well as of the state organs is complemented according to respective legal regulations by the responsibility of the national plants located in the regional area. This co-operation makes it also possible for sociologists to take part in the shaping of the future. Under socialist conditions the development of the social environment, of the mutual human relations can be prognosticated and deduced from that, also be planned, that means, it becomes a reality in the period foreseen. The condition of this is the political power of the working class under the leadership of its Marxist-Leninist party. Only in this sense we must understand that the working out of a social prognosis for a regional area involves also the sociological prognosis as a permanent task of the responsible managements.

USSR WORKING CLASS: POSITION IN SOCIETY
AND PROSPECTS OF DEVELOPMENT

A. A. AMVROSOV

USSR

The working class of the USSR is developing against the background of rapprochement of the classes and all social groups, of overcoming the differences between town and village, between mental and manual workers. The social structure of Soviet society is changing in the direction of classless, socially uniform society.

Over a half-century-long experience of the USSR has confirmed the Marxist-Leninist teaching about the leading role of the working class in public life, in the solution of the problems of achieving classless society. The working class sets an example for all sections of the people.

The strength of the working class is constantly growing along with the realization of the plans of the development of national economy, emergence of new industrial centres. The rate of this growth during the last fourty years is very characteristic. In 1928 the working class in the USSR was 8.5 mln strong; in 1940 — 22.8 mln; in 1950 — 27.7 mln; in 1960 — 44.4 mln; in 1966 — 55.9 mln; in 1967 — 57.4 mln; in 1968 — 59.2 mln; in 1969 — 60.4 mln; and in 1970 — 61.9 mln strong.[1]

At present the number of workers amounts to 55% of the working population of the USSR. The growth of the number of the working class means the growth of its role in society, consolidation of socialist system.

The highest rate of growth of the number of the working class is registered in the leading, constantly growing branches of industry — in machine-building and metal-working, in chemical and metallurgical, in electrotechnical and other branches of industry. During the last thirty years (1940-1969) the total number of industrial workers increased 2.5 times; in machine-building and metal-working industries — 3.5 times, in construction material industry — 5.6 times; in electrical power industry — 4.4 times; in chemical and oil industries — 4.3 times.[2]

Rapid growth of the number of the working class is characteristic of all Soviet national republics. Balanced development of productive forces aimed at overcoming economic and cultural backwardness of national regions and based on the Leninist national policy took place there. But the rapid economic and cultural development of these regions resulted in higher growth of the number of the

[1] SSSR v tsifrakh v 1970 godu.

[2] Raschyoty. Narodnoye Khozyaistvo v 1969 g., p. 165.

working class there than in the country as a whole. The number of workers and employees in the USSR during the period of 1940-1969 increased 2.5 times, in Moldavian SSR — 8.8 times, in Lithuanian SSR — 6.3 times, in Kazakh and Armenian SSR — over 5 times, in Kirgiz SSR — 4.3 times.[3]

Along with the quantitative growth of the working class great qualitative changes of its structure took place as well. Balanced development of productive forces, progress in technology, scientific labour organization, growth of the educational standard of workers conditioned radical changes in the character and contents of labour, caused rapid rise in the proportion of skilled labour and decrease in the number of workers engaged in manual and unskilled labour. Over-all mechanization and automation of production enabled workers to participate in controlling automated mechanisms, complex technological processes. Manual and unskilled professions are giving way to new professions.

Socialist society, as the most humane society, takes a great care of all-round development of a personality, of the rise in the level of general and special education and culture, of workers' health. The worker is developing and perfecting not as a mere producer and bearer of manpower, but as a man, a personality with its own individual characteristic features.

Striking changes took place in the spiritual make-up of the working class. They could not but tell upon the growth of the role of the working class in public life. Radical changes took place in educational and cultural and technical standard of workers. In 1918, 36 per cent of industrial workers of Soviet Russia could neither read nor write. But as early as in the '30s illiteracy among workers was eliminated in the main. In 1939, there were 82 people with secondary and higher education per a thousand people, in 1959—386 people, in 1970—550 people. The educational standard of the industrual workers is even higher. 594 people out of a thousand have higher and secondary education.[4] *At present over half of the working class of the USSR have secondary (complete or incomplete) and higher education.*

In the USSR, many plants, factories and construction sites grew to a sort of centres for raising the general and special educational standard of their workers. For example, the Kirov machine-building plant in Leningrad has a large educational centre which comprises an evening school for working youth, a technical school and a branch of the correspondence polytechnical institute. Over 2,000 of its workers study at correspondence technical and evening educational schools, over a 1,000 — in Leningrad institutes, 35 workers of the plant are authors of various books and booklets.

It will be no exaggeration to say that the modern Soviet worker craves for knowledge, for mastering cultural wealth, for revealing his talents and capabilities.

The principal manifestation of the changes in working and living conditions of workers is the increase in their incomes, improvement of their material well-being. The wages are constantly growing, the number of privileges for those working in difficult conditions is increasing, taxes are going down, pensions are going up. Real incomes of industrial and construction workers in 1969, as compared

[3] Raschyoty. Narodnoye Khosyaistvo v 1969 g., p. 542—545.
[4] Narodnoye Khozyaistvo SSSR v 1968 g., p. 34.

with 1913 (taking into account elimination of unemployment, shortening the work-ing day), increase 7.6 times.[5] The implementation of the 5-day working week with two days-off promotes further improvement of working and living condi-tions, growth of cultural and technical standard of workers.

The workers' well-being is greatly influenced by the economic reform which has been implemented in the USSR since 1966.

Enterprises have set up their funds for material incentive, social and cultural development and housing construction, production development. Workers are paid 3 types of bonuses from the material incentive fund which is formed by way of assignments from the enterprise's income:

1) Monthly, given by shop superintendants upon agreement with the trade unions.

2) Annual, based on results of the work of the enterprise during the year.

3) Extraordinary, for accomplishment of work of particular importance, for rationalization and inventive activities.

The amount of the bonus depends on the worker's continuous length of ser-vice, his speciality.

The funds for social and cultural development and housing construction and for production development can also be regarded as funds for improvement of workers' material well-being.

Such are the qualitative and quantitative changes in the USSR working class, conditioned by the building of a new society, by broadening and deepening the revolution in science and technology.

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The working class in the socialist countries occupies principal, key positions in all spheres of public life — economic, social, political and ideological — and it accordingly enjoys great authority in society.

The working class exercises its influence upon all the spheres of public life through various state and public organizations — the Party, the trade unio ns the Soviets, the Komsomol and others. And the principal condition for exercising the leading role of the working class in society is the leading and organizing acti-vity of the Communist party. It unites best workers, collective farmers, intellectuals and employees, and acts as the vanguard of all the Soviet people. And at the same time, expressing the working class goal, ideology, policy and morality, the Commun-ist party, first of all, is a political party of the working class.

Let us consider the principal manifestation of the leading role of the Soviet working class in economic, social, political and spiritual spheres of public life.

Economic Sphere. The social progress of the Soviet society depends, first of all, on labour activities of the working class. Workers are engaged in main spheres of public production: in industry that constitutes the material basis of the national economy, in construction, transport and communications; in agriculture, and also in the sphere of daily services. The working class creates the biggest part of the *national product.*

[5] Narodnoye Khozyaistvo SSSR v 1969 g., p. 129.

In modern conditions a great part in social progress is played by the revolution in science and technology that reveals great opportunities for raising the efficiency and intensification of public production.

Soviet workers are vitally interested in developing and deepening the revolution in science and technology and are in its vanguard. Realization of scientific discoveries in practice does not threaten them with unemployment and drop in living standards, but, on the contrary, the revolution in science and technology and rise in labour productivity brings about the constant growth of wages and well being of all working people, easier work, and higher cultural and technical standards of workers.

The working class participates in defining the main directions, rates forms and methods of technical progress through the state national economy control bodies, through Party and other public organizations.

The wide masses of workers are drawn into the immediate control of production. Meeting of workers and standing productional comissions discuss and solve problems of major importance, such as: drafts of production plans, results of fulfilment of the adopted plans, drafts of collective agreements, implementation of plans of scientific organization of labour and development of new machinery and others. Workers take an active part in numerous organizations engaged in the production's control (design and economic bureaus, laboratories and groups of labour organization and rating, councils of innovators and inventors and so on).

Technical creative work of industrial workers is promoted on a mass scale in the USSR. Many enterprises have complex teams of innovators and inventors which unite the best engineers, technicians and workers. In most of the towns local scientific and technological councils are set up coordinating technical activity of workers of various spheres of national economy. The number of innovators and inventors is growing year by year. So, in 1950 there were 555,000 of them and in 1969 their number amounted to 3,457,000.[6]

The activity of workers-inventors and innovators is highly appreciated by the society. Their portraits can be seen in factory clubs, on "Boards of Honour". They often speak from University rostrums, over the radio and T. V. Local and central periodical press often writes about them.

Innovation, technical creative work and labour initiative of workers find vivid manifestation in a mass movement for Communist attitude towards work, that is the highest form of socialist emulation. Scores of millions of workers participate in the movement. Many of them have completed the 5-year plan ahead the schedule, achieved high labour productivity, economy of raw materials and fuel, high quality of production.

So the working class is the most effective productive force of the Soviet society.

Social and Political Sphere

The working class with its numerous revolutionary and labour traditions' political maturity takes an active part in governing state and public activities.

The state power in the USSR is represented by Soviets of working people's deputies — from local to the Supreme Soviet of the USSR. V. I. Lenin told the

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[6] Narodnoye Khozyaistvo SSSR v 1969 g., p. 75.

working people after the October Revolution: "Remember that now *you your-selves* are at the helm of state. *Your* Soviets are from now on the organs of state authority, legislative bodies with full powers."[7]

Soviet workers participate in legislative activities. Out of 1,517 deputies of the Supreme Soviet of the USSR elected in 1970—481, or 31.7 per cent, are work-ers.[8] In 1970 1,742 workers, or 29.6 per cent of the total number of deputies, were elected to the Supreme Soviets of the union republics. In local Soviets workers amount to 36.5 per cent of the deputies.[9]

Soviets of workers' deputies solve vital problems of the development of the Soviet society. The Communist Party, a leading and guiding force of the Soviet society, does not interfere with the activities of the Soviets but it pursues its policy through communist members of Soviets.

Each deputy studies draft laws and resolutions beforehand and has every opportunity for expressing his critical remarks during the preparatory period or at the session.

About half the deputies of the Supreme Soviet of the USSR are members of standing committees that work out draft laws. Thus the planning and budgetary committee of the Supreme Soviet of the USSR consists of 51 deputies of which 8 are workers. Of course, workers are not engaged in thorough economic calcu-lations. It is done by skilled experts. But workers-deputies put forward their amend-ments, convey the public opinion of the workers of their enteprises. Their pro-posals are taken into consideration by the members and heads of these standing committee. As a rule drafts of main laws are published 3-4 months before their discussion by the Supreme Soviet. Deputies can put forward their proposals, cri-ticise erroneous ideas. The sessions of Soviets are characteristic of not sensational but business-like critical approach.

It should be borne in mind that worker and other deputies do not confine their activities to participation in preparation and work of the sessions of Soviets. As deputies they carry on a lot of daily routine work in their constituencies: receive electors who bring to them their requests, complaints, advice. They take part in the activities of various deputy groups within the limits of their residencies; inform their electors on the adopted laws and resolutions, report on the work done, exer-cise control, and so on.

An important part in the life of Soviet workers is taken up by trade unions — the most massive organization. Trade unions educate workers in the spirit of commu-nist ideals, organize socialist emulation, conclude collective agreements with the enterprise management to control the relations and mutual commitments of the management and workers.

Soviet trade unions enjoy vast rights in protecting the workers' interests. The enterprise management may not solve the problems of work management, pro-duction rates, wages, factory regulations and the like without consent of the trade unions. Sometimes, though not often, disputes between the trade unions and fac-tory management take place. Trade unions express their non-confidence and en-

[7] V. I. Lenin, Collected Works, Progress Publishers, M., 1964, vol. 26, p. 297.
[8] Vedomosti Verkhovnogo Soveta SSSR, No. 24, 1970, p. 278.
[9] Pravda, 20. 4. 1970, p. 1.

ter corresponding organs with proposals of demoting those of management who neglect the care of workers, who do not observe the collective agreements.

The working class in the USSR enjoys the leading role in carrying out socialist changes in rural areas in consolidating the alliance with peasants, the unity which V. I. Lenin called the Alpha and Omega of the Soviet power. Owing to the alliance with the working class working peasants of the USSR have transformed from a class of small owners into a new social force. In collective farms they have acquired habits of collective labour and collective psychology.

By its selfless work the working class has won love, respect and gratitude of collective farmers, created the necessary prerequisites for still more coordinated teamwork, for consolidation of the inviolable friendship between them.

Being the vanguard and the most ideologically hardened force of the socialist society the working class not only influences the peasants but the intelligentsia as well.

In modern conditions the intelligentsia as well needs the Communist Party leadership. It regards the working class as its firm support. In its policy, the Communist Party takes into consideration specific peculiarities of mental work; its attitude towards the intelligentsia is characterized by tact and regard for it. The Party educates the intelligentsia in the spirit of high civic responsibility to the people; it clears the way for everyone gifted and talented, realistic and progressive.

In the Soviet society, relations between the working class and the creative intelligentsia are characterized by close ties and co-operation. Artists, writers, composers, actors visit industrial enterprises, arrange mobile exibitions of their works; report on their activity, deliver speeches and lectures before workers. In their turn, workers come to studios of painters and sculptors, take part in discussions on literary, theatrical and musical works. A number of large industrial enterpises set up their prizes for the best works of art. Such creative contacts are mutually advantageous for both workers and intelligentsia. Workers of art and culture come to better and more profound understanding of social reality. Industrial workers raise their educational and cultural standard, satisfy their intellectual needs.

Life itself, present-day reality confirms Lenin's prevision: "Only collaboration between scientists and workers can put an end to oppressive poverty, disease and dirt...

No forces of darkness can withstand an alliance of the scientists, the proletariat and the technologists."[19]

In Spiritual Sphere. The leading and creative force of the working class is manifested in spiritual life as well. Its ideology — Marxism-Leninism — has become an all-people ideology, a basis for the development of socialist culture. Morality and social psychology of the working class, the spirit of comradeship and collectivism, high discipline and organization, socialist patriotism and working-class internationalism are personified in the moral make-up of the Soviet people, in their norms of socialist community.

Workers not only create the material basis of culture, e. g., necessary material prerequisites for the development of spiritual wealth (theatres, clubs, libraries, cinemas, etc.) but directly participate in the country's cultural life. Many workers go in for various spiritual acitvities: science, literature, invention, amateur art.

[19] V. I. Lenin, Collected Works, Progress Publishers, Moscow, 1965, v. 30, p. 402.

The socialist way of life itself is conducive to emergence of tallented writers, painters, musicians, actors from the masses of workers, peasants and intelligentsia.

Such are the main manifestations of the leading role of the working class in economic, political and spiritual spheres of public life. The working class will continue to excercise its leading role till disappearance of classes, till the formation of communism.

Trends in development of the working class in the USSR

The development of the working class is an inalienable part of the general process of changes in the social structure of the Soviet society, in gradual rapprochement of classes and all social groups, overcoming of still existing differences between town and country labour.

One of the main sources of constant growth of the Soviet working class is the system of vocational education established in 1940. At present the country has a network of over 5,000 educational establishments under the State Committee of the Council of Ministers of the USSR for vocational education. Over 2,000,000 young people study at these establishments. From 1941 till 1969 22,000,000 skilled workers graduated from these schools.[11]

Other important sources of training of skilled workers are the following: individual training within a working team and a wide network of courses organized at the enterprises. In 1969 enterprises, offices and various organizations taught new skills and professions to 4,403,000 workers and employees. Over 11,000,000 workers and employees improved their professional skills.[12]

The Directives of the 24th Congress of the CPSU envisage that "during the five-year period not less than 9,000,000 skilled workers shall be trained at vocational schools for all the branches of the national economy. The training of cadres for agriculture, the building industry, the light and food industries and the services industry shall be speeded up. In 1975 the number of students enrolled in vocational schools training skilled workers for the most complex trades and at the same time giving them a secondary education shall be increased to 300,000-400,000.[13]

Great changes will take place in the professional structure of workers. More and more new branches of industry are undergoing mechanization and automation. The machine-building industry, for example, is rapidly increasing the number of automatic machine-tools and automatic production lines, and, correspondingly, the number of adjusters, the number of workers servicing automatic control panels, the number of fitters of testing instruments.

During the further development of the Soviet society the collective-farm peasantry and the intelligentsia will enrich themselves with the experience acquired by the working class as the progressive leading force. In their turn, workers raise their cultural and technical standard closer and closer to that of the intelligentsia. Classes and social groups mutually enrich themselves and get closer and closer to each other. The structure of the Socialist society is becoming still more homogeneous. The emergence of a classless social structure is being gradually prepared. On building up communism the working class will fulfil its great historic mission.

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[11] Narodnoye Khozyaistvo SSSR v 1969 g., pp. 550—551.
[12] Narodnoye Khozyaisto SSSR v 1969 g., p. 553.
[13] 24th Congress of the CPSU, NPA Publishing House, Moscow, 1971, p. 294.

RESTRATIFICATION OF THE NEGRO POPULATION
IN THE UNITED STATES

PAUL CROSSER

USA

The thesis expounded in this paper presents the Negro population of the United States as having exchanged the existence of a caste to an existence of a semi-caste in the wake of the Civil War. The thesis then goes on to expound the proposition that the Negro population of the United States, since World War I and, moreso, since World War II, has been set on a road which could enable it to exchange its semi-caste position to a position of a semi-class.

The yardstick by which the lines are drawn between the three types of social frameworks, into which the Negro population of the United States has been cast, is presented by the aspect of social mobility. In the pre-Civil War period, the caste character of the position of the Negro population in the United States has been one of complete social immobility. In the period immediately following the Civil War, the semi-caste character of the Negro population in the United States was characterized by making social mobility as difficult as possible. In the period following World War I and, moreso, in the period following World War II, the semi-class character of the Negro population in the United States is characterized by easing up social mobility to a certain extent. It is in regard to this latter phase which pertains to social mobility of the Negro population that the specification Negro Revolution can be used, which is sweeping the United States at present.

The method applied in this exposition will relate empirical material pertaining to the last two phases of development, the semi-caste phase and the semi-class phase. This method is to be used in a manner which will make the factor of relative social immobility and mobility stand out as aspects determining the respective social frameworks of semi-caste and semi-class, into which the Negro population of the United States has been cast.

The approach to be used in making the factors of relative social immobility and relative social mobility pertinent to the demonstration of the semi-caste and semi-class character of the Negro population, will place emphasis on the rural Negro population in the examination of the period following World War I and World War II.

In a sense, it can be said, that the change from relative social immobility in the period following the Civil War to a relative social mobility, in the period following World War I and World War II, is due to the deterioration of the social and economic position of the rural Negro population in the United States. This dete-

rioration in the position of the rural Negro population went hand in hand with chances of improvement which the partaking in the growing urbanization on the part of the Negro population offered. It goes without saying, that the negative structural change in American agriculture, and in particular, the negative structural change in American agriculture in the South of the United States, as well as the positive structural change in the industrialization of the United States in the North, as well as in the South of the country, had a decisive influence on the respective changes in the social mobility and the social framework of the Negro population in the United States.

The basic economic factor, which underlied the emergence of the Negro population in the South of the United States as a semi-caste after the Civil War, was the political decision made by the United States Congress and the Administration in Washington not to enable the freed slaves to become owners of land in the South. Such a move would have been possible, had the Federal United States Administration been prepared to offer payments to the former slaveholders. With four million slaves freed, and with one thousand dollars the average price of a slave, a sum of four billion dollars would have been necessary to reimburse the former slave owners for the loss of their slaves. A stipulation could have been attached to that reimbursement to the effect that part of the land of the former slave owners should have been made available to the former slaves, to enable them to become landowners. Such was not the case, however, with the result that the former Negro slaves had but one way to try to make a living in Southern agruculture, and that was to become sharecroppers.

Sharecropping, the way it developed in the post-Bellum period, following the Civil War, in which the Negros and the former plantation slaveowners became engaged, was keyed to a preservation of non-monetary ties between the two parties. The vast majority of the sharecroppers from amongst the former Negro slaves came to be drawn into a relationship with the former slave owning plantation owners, which provided for sharing with the plantation owners of part of the crop which the sharecroppers harvested, and thus make it a deal in kind and not in money. By keeping money out of the basic relationship between the sharecroppers and the plantation owner, it became almost impossible for the freed slave to accumulate monetary funds. Such exclusion of the sharecropper from the partaking in the accumulation of monetary funds made it, in turn, almost impossible for the former slave, operating as a sharecropper, to ever have a chance to become a proprietor of land. Statistics, published towards the end of the 19th century, show that it was the Whites and not the Negroes who became in increasing numbers owners of the land owned by the former plantation owners. Thus the vast majority of the former slaves were landed, so to speak, in a no-man's land, as far as their position in commercialized agriculture is concerned.

Those former Negro slaves who had become sharecroppers were not any more part and parcel of a commercialized slave plantation economy. Neither were those former Negro slaves, who had become sharecroppers, keyed to the monetary aspect of a commercialized plantation economy. By being forced to operate on a subsistence level in sharing the agricultural produce in kind with the plantation owner, the sharecropper came to be condemned to a submarginal existence. If there ever were any attempts made by any of the sharecroppers to become tenant farmers, the legal provisions governing landlord-tenant relations in the South-

ern states did not offer any protection to the tenant. The tenant did not have any right of permanency in regard to the land which he cultivated in the South.

This slow progress of industrialization of the South made it extremely difficult, if not impossible, for great numbers of the Negro population to forsake its sharecropping existence for jobs in industry in the South. Had the social immobility, which tied the vast majority of the Negro population in the South to sharecropping, been broken by the opening of a substantial number of jobs in industry in the South, the cultural lag, with which the majority of the White population in the South had been imbued, would have been lessened. As it happened, the civilization lag, as far as the lag in industrialization in the South is concerned, continued to reinforce the cultural lag, which was rooted in anti-Bellum patterns of thinking on the part of the White population of the South.

The above stated civilization lag came to be pierced to some extent in the period of World War I and its aftermath and, moreso, in the period of World War II and its aftermath. That piercing came about for the most part due to an acceleration of industrialization in the North of the United States. World War I and World War II, both brought about an acceleration of the expansion of United States industrial production, with the North, however, outpacing the South. That development resulted, in turn, in the easing of the social immobility, which characterized the position of the Negro population in the South since the Civil War. Waves of internal migration of Negros from the South to the North accompanied the vast increase in industrial production in the North.

The wars themselves, World War I and, moreso, World War II, set into motion a social mobility among the Negro population in the South through calls for military service. In addition, the availability of jobs in war production provided an attraction for scores of Negros from the South to look for jobs in the industrial North. The wars, World War I and World War II, did not in themselves last very long, but the cessation of hostilities did not result in a return of those Negros to the South who had left the South in the search for jobs in the North. Just the opposite is to be noted, the trend of internal migration from the South to the North continued after the two wars. It is only after World War I and, moreso, after World War II, when the movement to the big cities of the North came to count hundreds of thousands of Negros in their midst.

The social pattern which had come to be formed in the North differed somehow from the social pattern which the Negros migrating from the South to the North of the United States had left behind. In the North the Negros found themselves as wage earners, the money aspect became an integral part of their economic existence. However, the vast majority of the Southern Negros settling in the North found themselves restricted, as far as the range of jobs in industry is concerned, to which they were admitted. Most of the Southern Negros coming to the North were unskilled, in terms of factory employment. They, therefore, had to take the least paying jobs and were, in turn, more subject to fluctuations in employment than the skilled and semi-skilled factory workers. The Negros, as the saying goes, were the last to be hired and the first to be fired. Job insecurity and low pay came to be the plague of the Negros, who came to settle in the North in the search for industrial employment. What eased the situation of many Negro families settling

in the North was the increased demand for domestic service, to be performed by Negro women, due to the rise of income of wide sections of the White population.

Some aspects of the segregation pattern, which had prevailed in the South, were retained in the North. The restriction in the kind of jobs which have become available to Negros, as well as the job insecurity and low pay, resulted in its counterpart, in segregation in housing. Segregation in housing resulted, in turn, in segregation in schooling. However, many symbols of segregation which kept the Negro population in the South in an inferior status, were not duplicated in the North. Negros in the North were not forced to sit in the back of public transportation vehicles. Negros in the North were not kept out of public parks and public libraries, as was the case in the South. Negros in the North were not kept out of all the eating places in the North which were frequented by Whites, as was the case in the South. Negroes were not restricted to buying their consumer goods to certain specially designated stores in the North, as was the case in the South. To sum it up, Negroes were not subjected to the effects of the same cultural lag on the part of the Whites which was designed "to keep them in their place" in the South. After all, the Union army won the Civil War and not the Confederate army. The Northerners among the Whites, as long as they had not themselves come to the North from the South, could not possibly react with disdain towards the outcome of the Civil War, which had resulted in the freeing of the slaves.

Very few Negros had lived in the North of the United States before the Civil War and those who did were not slaves. Thus, there was one more reason, why the cultural lag, fed by the resentment of the White population of the South against the freeing of the slaves, could not possibly be duplicated in the North. It thus became a matter of enlarging the employment opportunities and increasing the pay of the Negro population in the North which came to underly their position in that part of the country. In that sense, one can say, that as far as the North of the United States is concerned, the Negro in that part of the country advanced to a class position which came to be, by and large, determined by the condition of the labor market.

It would be misleading, however, to assume that the advancement of the Negro in the North to a class position can be left completely to the factor of social mobility. There are legal and extra-legal impediments at work which prevent the Negro from leaving the advancement of his position to the forces at play in the labor market. Though the Negroes in the North have left a semi-caste position, in which they had found themselves in the South after the Civil War, they have not yet fully advanced to a genuine class position in the North. Negroes in the North have come to be placed in a semi-class position, since their social mobility came to be much more impeded than has been the social mobility of the White people in the North.

Discrimination in hiring of Negro personnel is one of the great impediments of occupational differentiation and the respective class differentiation of the Negro population in the North. Laws against discrimination in hiring, which have been passed in some states in the North, could not provide a full remedy for the situation. Discrimination is not the only factor which prevents diversification in job opportunities for the Negro in the North. Lack of training is one other important factor which prevents occupational differentiation as well as class division of the Negro in the North. Of late efforts have been made to advance the training of Negros for jobs in industry through United States government financed projects.

On a small scale, not extending beyond the range of tokenism, some large private firms have also taken a hand in that direction. Easing of admission standards to higher educational institutions for Negros has also taken place in the more recent past.

As far as the segregation in housing is concerned, it is being eased by the passage of laws in several Northern states which forbids the discrimination of Negros in the renting of apartments and the buying of houses. The effects of such legislation cannot be expected to have as a result the disappearance of Negro ghettoes in the big industrial cities of the North. It is only when the majority of the Negro population in the North were to be lifted above the poverty level of existence, that they will be able to move out of the ghettoes. Until that time, the so-called "open covenant legislation", passed in several Northern states, which is aimed at making it legally possible for Negroes to secure a dwelling place outside of Negro ghettoes, will benefit only an infinitesmally small number of better paid Negroes, those who have jobs as skilled workers or who are professionals.

Concerning the segregated Negro schools in the North, the same can be said about it, what is to be observed in regard to the segregation in housing. As long as job insecurity and low pay prevail among the Negro population in the North, ghetto living and ghetto schooling will go with it. Only after ghetto living will come to decrease to a considerable extent, ghetto schooling will also come to show a decrease. The device applied in some of the larger cities in the North, to have Negro children bussed from the ghettoes to schools in non-ghetto regions, is not more than a makeshift. It puts in a sense the wagon before the horse, as does the Supreme Court decision authorizing school desegregation. Occupational desegregation will be followed by the desegregation in housing and then be followed by school desegregation, when the social mobility of the Negro population will have come closer to the range of social mobility of the White population in the North.

It would be unrealistic, however, to expect occupational desegregation and social mobility as its counterpart, to result in the same class division of the Negro population in the United States as it had been the case with regard to other United States minority groups. The pattern of class division of other minority groups in the United States population can be traced to United States immigration waves in the 19th century and the first decade of the 20th century. The immigration wave of the nationality and ethnic groups, arriving last in the succeeding immigration waves, had to take the least paying jobs. When the Germans and the Irish came to the United States around the middle of the 19th century, they had to take the least paying jobs at that time. When the Italians and other nationalities from Southwest Europe, as well as the Poles and other nationalities from Eastern Europe started arriving towards the end of the 19th century and the first decade of the 20th century, they were, in turn, forced to take the least paying jobs. The Negros who arrived through internal migration after World War I and World War II have come to be in line for the taking of the least paying jobs at their arrival at the urban centers of the North of the United States. With mass immigration closed by the United States Immigration Act, which was passed during World War I, there is no nationality or ethnic group in sight which could succeed the Negro in the least paying jobs. The Negroes, as the last arriving nationality and ethnic group, will thus be forced, for a considerable period of time, to fill the least paying jobs.

What could lift the working and earning standards of the vast majority of the Negro population in the North of the United States, is acquisition of skills. In addition the intensification of the second Industrial Revolution, the spreading of automation, could make it possible to up the pay of the least paying jobs. This is, however, a process, the full realization of which would take decades. During that period the Negroes of the United States will continue in their vast majority to constitute part of the lower classes in the United States. This confinement of the Negro population in the United States for decades to come to the range of the lower classes can, in turn, be expected to result in the growth of class consciousness among the Negro population in the United States. It is the extent of class consciosness, which can be expected to grow among the Negro population in the United States in the decades to come, which will come to express the change in the position of the vast majority of the Negros in the United States from a semi-class position to a genuine class position.

III. MATHEMATICAL MODELS AND METHODS IN SOCIAL PREDICTION

III. MODELES MATHEMATIQUES ET METHODES DE PREVISION SOCIALE

SOME PROBLEMS OF SOCIOLOGICAL INFORMATION
MEASUREMENT SYSTEMS

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USSR

At present constructing and utilization of the social behaviour theories are impossible without developing a theory of measurement. Now in the world literature the problems of measurement are widely discussed in three directions: conceptual-philosophic framing of measurement ideas; developing formal mathematical measurement theories; applied measurements.

A theory of measurement is considered to be satisfactory if it is formalized on the basis of sufficiently profound conceptions and if it is of applied character. From this point of view the representative theory of measurement the main ideas of which are set forth in paper [1] seems most interesting. This theory has the following premises: a) measurement is assigning numerical symbols to empirical objects, on which the system of relations and operations is fixed (to empirical system). Given relations and operations must turn into the adequately selected numerical relations and operations. Then the totality consisting of an empirical system, adequately selected numerical system and method of the assigning numbers (the function) is called scale; b) generally speaking, measurement in the given scale is defined not uniquely. The arbitrariness in measurement is limited by the class of suitable transformations depending on which various types of scales are stated [1]; c) the possibility of measurement data processing and adequate interpretations of the findings are defined by the class of suitable transformations.

The representation measurement theory comes into contact with the reality measured at two points. The first contact takes place at the moment when empirical system is formulated. It is implied that the ascertained empirical system adequately maps the measured property. The case when this assumption is correct is not very frequent in science. Particularly, it is correct in the measurement of such well known physical properties as mass, size of solid, etc.

When a man or a group behaviour is under consideration it is not likely that we shall find such simple and well studied properties as the above mentioned. As the empirical system is an abstraction of a rather high level, in social sciences the researcher most often fails to turn accurately from a real property to the empirical system which reflects this property and after stating the empirical system to determine whether it is adequate to the property measured. Thus the correct application of representative theory of measurement is possible only when well-known properties are measured and their adequate mapping into the empirical system may

be demonstrated rather clearly. Hence it becomes clear, why the representative measurement theory is rarely applied to field studies of which many scientists are quite aware [4, 5].

The representative measurement theory has another contact with measured reality when it must be decided whether the statements concerning measurement results are adequate, that is, whenever a scientist attempts to interpret and verify the theory. The nature of this contact is the same as in any other theory connected with applications. Suppes and Zinnes, however, make attempts to formalize the procedure of deciding about adequacy of measurement results using the same concepts which constitute the measurement theory itself. They contend that the adequacy of numerical statement is associated with suitable class of scale transformations, with the uniqueness of measurement whereas the uniqueness of derivative measurement [1] and, consequently, the suitable class of transformations are defined by the formula according to which the computation is made. While in natural sciences such formulae reflect some objective laws, in behaviour sciences the formula is postulated by the researcher himself on the basis of intuitive considerations. And it means, thus, that the class of suitable transformations and, moreover, the class of adequate statements are also postulated by the researcher and are not inferred automatically from reality. Of course, the above said does not refute the fact that the adequacy of statement, in accordance with [1], is a necessary (but not sufficient) condition for acceptability of this statement.

From this consideration one can make the following conclusion. In social empirical studies and especially in behavioural sciences the researcher, first of all, defines the formula according to which the derivative measurement is made. The formula, in its turn, defines or, in any case, limits the set of suitable properties of the primary scale and, consequently, the empirical system. In some cases this circumstance especially meets the eye. Indeed not infrequently a mathematician-practician becomes a regular plant producing formulae (and sometimes he is openly induced to do so), and the sociologist becomes a sort of a merchant selling the produce. Such approach is not new, it was invented by Procrustes. Luckily, it is not widely spread and the sphere of its application is continuously narrowing. And as to practical activity of the social researcher the matters are somewhat different. Here though intuitive (in relation to mathematical formalisms) but a certain selection of empirical systems, on the one hand, and of derivative measurement methods, on the other, takes place and though implicitly their correlation is ascertained. In essence the greatest difficulties in measurement and interpretation of findings are caused by impossibility to keep to the sequence of operations in measurement which is prescribed by the representative theory. In accordance with the representation theory the first step is the definition of the empirical system with relations, that is separating out a studied set of objects and the properties of their relations. Then a numerical system with relations and homomorphism of empirical system into numerical one are selected. This homomorphism must ensure adequate correspondence between the relations of empirical objects and of numerical symbols from the numerical system. Current measurement procedures in sociology are based on a logic which is, in a sense, inverse. Originally, postulated are the form and propeties of the numerical system, then the class of suitable transformations of measurement and measurement itself (that is, the function which puts numbers in correspondence with the object measured). Usually measuring func-

tion and the object measured are defined by a formula according to which the measurement is made and, moreover, the postulated objects are models of real objects which are studied. To what extent is the selected procedure of measurement suitable? This question may be answered only after the consistency has been ascertained between the obtained results and the given system of ideas which is either acknowledged as correct or empirically verified. So, in this case we mean consistency and not adequacy. This is the very reason why theories based on such measurements are never fundamental and cause many arguments. This explains the fact also that several various or even contradictory theories may be constructed on the basis of the same set of measurements and within each theory the findings are connected with a non-contradictory system of interpretations. Figuratively speaking, such procedures give the researcher a compass showing the direction to the probable aim, which may prove to be correct.

However, inspite of the fact that the above mentioned measurement procedure does not correspond at all, by its logic, to the procedures suggested by the representative theory, this fact does not devalidate the latter neither as a theory giving basis for practical measurement nor as a theory producing certain system of ideas connected with measurements. The representative theory is a very suitable basis for giving a meaning to measurements made in sufficiently developed fields of knowledge which have formalized concept systems and use a strict language. The system of concepts developed in representation theory seems very suitable and attractive for the purpose of defining measurement procedures which are not covered by this theory.

The sequence of operations in the current measurement procedures not obeying the representative theory may be defined with the help of the formal concept of measurement method. To define strictly the measurement method and to find out the difference between this method and the scale by which measurement in the representation theory is made we shall, firstly, use concepts, worked out in the representation theory, and, secondly, state some of these concepts in a form suitable for our purposes.

The basis of scale constructing consists of two systems with relations: empirical and numerical. The empirical system with relations is the ordered pair $\mathfrak{A} = <A, S_A>$, in which A is a domain of the system which is a set of empirical objects, S_A is a totality of relations which are correct for the objects from A. The numerical system with relations is the ordered pair $\mathfrak{N} = <H, S_H>$ where H is the system domain, consisting of a set of numerical symbols (it may be continual), S_H is a totality of relations which are correct for the elements from H. The scale is said to be given when the homomorphism from the empirical system into numerical system is given (that is such function $f: A \rightarrow H$ that $(a_1,...,a_k) \in P^{(\kappa)}$ iff $(f(a_1),...., f(a_k)) \in \Pi^{(\kappa)}$, where $P^{(\kappa)}$ is an arbitrary relation from S_A, and $\Pi^{(\kappa)}$ is numerical relation from S_H, corresponding to this arbitrary relation). Then the primary scale is the ordered triplet $<\mathfrak{A}, \mathfrak{N}, f>$ and f is the primary measurement. If the set of scales with measurements $f_1, f_2,...., f_n$ is given and it is mapped into a new numerical system with the help of some function $F(f_1,...., f_n)$, the mapping is called derivative measurement and the totality consisting of scales, numerical system and function F is called derivative scale [1]. There are two essential problems in the representation measurement theory: the existence (representation) problem and the problem of uniqueness. When dealing with the existence problem the question to be answer-

red is whether a primary (derivative) measurement exists which can link the given systems, and while dealing with the problem of uniqueness a class of suitable transformations of a given measurement is ascertained, i. e. a set of transformations of homomorphism in relation to which the given scale is invariant. The question if the base system (the empirical system with relations in primary measurements and the set of scales in derivative measurements) is suitably constructed is ignored.

The formal answer to this question is often impossible to obtain and therefore the verification of measurement results in a general case should be considered an informal operation which is safe to that extent to which the theory whose objects are measured is formalized.

Now define formally the concept "measurement method" in accordance with the above mentioned current measurement procedures in sociology.

Suppose the numerical system with relations $\mathfrak{N} = \langle H, S_H \rangle$ and the set A of mathematical objects (for instance, the elements of A may be vectors, numbers or symbols of some alphabet) are given. The elements from A are some models of the objects measured. Define also some function $f: A \to H$ and class Φ of suitable transformations $\varphi: H \to H$. The ordered four $\langle \mathfrak{N}, A, f, \Phi \rangle$ will be called the measurement method and the function $f: A \to H$ will be called the measurement. As an illustrative example we shall use a well-known method of measuring association between variables by means of determination coefficient defined as the square of correlation coefficient.

In this exmple H is the set of non-negative real numbers, and S_H consists of some numerical relations and operations which as a rule are not formulated by the researcher expicitly. But usually S_H must include the relation "x is more than y" (that is, the possibility to compare the associations by degree), division (i. e. the possibility of quantitative evaluation "how many times one association is more intensive than the other"), etc. The models of the variables are numerical vectors. Such postulation of A set necessarily involves the requirement of a possibility to measure the realizations of variables. The function f of two variables is given by a well-known formula of the determination coefficient [2]. The set of its suitable transformations is usually assumed to be trivial in the sense that it consists of a single identical transformation. Sometimes a possibility of multiplication by any constant number is assumed.

Note that the postulation of the Φ set involves some requirements to the measurement of elements of A.

For instance, in our case if Φ is assumed to be trivial the necessary requirement for the measurement of variables is that they must be measured with the accuracy not worse than that to linear transformation. This requirement, in its turn, limits the set of suitable transformations of measurements, the set of variables measured etc.

If the measurement method $\langle \mathfrak{N}, A, f, \Phi \rangle$ is given, the system of relation S_A corresponding to numerical system S_H is defined on the set of initial objects A. It means that any n-place numerical relation P_A defines over A set n-place relation P_A which is defined by the following condition: $(a_1, a_2, ..., a_n) \in P_A$ iff $(f(a_1), ... (a_n)) \in P_H$. In our example if S_H consists of the relation $x > y$, then S_A consists of four-place relation "a_1 and a_2 are correlated more than a_3 and a_4", defined on the set of variables. One problem of the mathematical theory of measurement methods is

the problem of description of S_A set relations with the help of "internal terms", i. e. only with the help of elements of A set without using terms of the measuring function f. Such description may help to verify the method: the more accurately the properties of relations from S_A describe properties of actual relations on a set of initial objects, the more justified the measurement method is. On the other hand, if actual relations on a set of initial objects cannot be investigated directly, it is possible to maintain that the more justified a measurement method is, the more support it obtains from other sources, then the relations S_A are the more accurate approximation to reality.

As soon as the system S_A has been constructed, we have a scale [1]$\ll A, S_A >, \mathfrak{N},$ $f >$since S_A is defined in such a way that the function f is a homomorphism of the system $< A, S_A >$ into the system $< H, S_H >$. Then the problem of describing a class F of functions such that $\varphi \xi F$ iff $\ll A, S_A >, \mathfrak{N}, \varphi_o f >$ is also a scale is being arisen (the problem of uniqueness [1]). Abstract definition of such properties of S_A which narrow the class of suitable transformations to F is an interesting problem. If the set of suitable transformations Φ correspond to "internal" set F, i. e. if $F = \Phi$ it is possible to say that the method application is correct.

Otherwise, the system S_A may be defined not in the unique way (when Φ is the class of suitable transformations), but it may depend on suitable transformations $\varphi \xi \Phi$ of the f function.

Thus the grounds of the measurement method theory differs from the grounds of the scale theory [1] and the formal problems of these theories are slightly different. It should be also noted that in the measurement method theory the system of relations S_A on the measured objects considered either in primary or in derivative measurements and in this sense they are equal, unlike the systems in representation theory.

Apparently, the formal theory studying properties of methods may be constructed and it will be equal with the representation theory in the sense that both of them are parts of more general theory of measurement. If some assumptions are correct we shall have the representation theory and if other assumptions are correct we shall have the method theory.

We shall illustrate the above mentioned ideas by the methods of correlation measurement. The application of most current methods imply that the objects of measurement are a set of numerical vectors representing the variables. Besides, the concrete method of measurement postulates some formula for expressing a measured index through these vectors. If the method of measurement is not limited by the given formula and if we consider any transformation of the formula defined by the postulated class of suitable transformations, then doing this we simultaneously define some necessary properties of uniqueness of the function included in the method of measurement. Thus, e. g. if in studying linkages the formulas of correlation theory are used (some correlation coefficients are calculated) and only their identical transformation is suitable, the method of measurement must include the function whose set of suitable transformations consists of all linear transformations. These requirements are very rigid as according to them, the relations on the objects measured must not only be transitive, symmetrical and reflexive, but the ratio of the differences of variables values must be measured with accuracy to identical transformation. Thus the definition of the method of linkage measure-

ment involves some requirements which must be satisfied by the method of measurement of the variables themselves.

Consider now relations on a set of variables. It is intuitively clear that the relations among variables may be of various types. So, one may define at least two types of relations: causal relation and concomitance relation. It is obvious, e. g. that official status of an individual (his post) determines his pay level and not vice versa. It is possible to find such an example when two variables are influenced by a third one, and are not influenced by each other. It is natural to require that the correlation coefficients (their formulas and calculation procedure) be dependent upon the structure of linkages between variables. This requirement is justified in the paper [3].

Thus, the method of measurement of linkage, on the one hand, depends on the structure of the linkage of variables and, on the other hand, it makes some necessary requirements to the method of measuring variables. In view of the structure of linkage of variables, the uniqueness properties of the function of measurement method of variables and of linkage measurement method it is possible to construct a classification of linkage measurement methods in the form of three-dimensional table whose cells will contain either sets of sufficient coefficients of linkage (measuring function of proper measurement method) or requirements to possible coefficients of linkage. As an example let consider several widespread coefficients: correlation coefficient (r_{xy}), partial correlation coefficient ($r_{xy \cdot z}$), multiple correlation coefficient (R), Kendall's rank correlation coefficient (τ), Q — coefficient (Q), the set of coefficients of quadratic conjugation (x^2) (Pirson's, Chuprov's and other coefficients), causal coefficient (P_{xy}) [3]. Require that class of suitable transformations be limited by the identical transformations. Define three types of linkage. The first type — correlation — is a structure when any two variables from the given set have no causal relation. The second type — automation — is

<div align="center">TABLE</div>

Types of structures ＼ Types of suitable transformations	I	II	III
I	$r_{xy} \cdot r_{xy \cdot z}$ τ, Q, x^2	τ, Q, x^2	Q, x^2
II			
III	P_{xy}		

a structure when some pairs of variables have causal relation and this relation is mapped by a graph, consisting only of circuits. The third type — simple structure — is a structure when some pairs of variables have causal relation and this relation

is mapped by graph having no circuit. According to the paper [1] let us form three groups of suitable transformations of linkage measurement method function. Identical and all linear transformations will be included in the first group. All monotonic one-valued transformations are included in the second group. All arbitrary one-valued transformations are included in the third group. The above mentioned coefficients may be classified now in two-dimensional table (see the Table).

The introduction of the classification is useful from different points of view.

1. After a measurement method is selected the researcher may formulate the requirements for measurement method of variables strictly enough.

2. If the variables have already been measured by some method and the structure of their interrelation is known the researcher may select a suitable linkage measurement method.

3. Constructing new methods of linkage measurement turns from a sporadic contriving into a deliberate search for methods satisfying some pre-formulated requirements.

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MULTIPLIER EFFECTS IN HOUSING MOVES AND JOB CHANGES[1]

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One reads much about the "housing market", or net of interrelated markets, localized in a given city's region.[2] Yet families and houses do not constitute a market in the sense of classical economics. Houses are largely indivisible units, like families, and are dispersed among fixed locations, characteristics which both violate the classical axioms.[3] One could think of a stream of new houses being built in sub-divisions for a stream of families coming to jobs in a new industrial park. A price structure would emerge to clear the markets in houses of various costs and families of various incomes; perhaps indivisibility and dispersed locations could be neglected. But wait awhile. Houses are not "consumed". Their life span is indefinite. As families move out the same houses reappear vacant. They attract other families from a whole region just as the former inhabitants may have been pulled to larger or more desirable houses elsewhere. Net yearly increments to houses and to families in a metropolitan area cannot be seen as real flows to be matched to each other in a market. A different view is required, a model of continuing realignment of huge existing stocks of houses and of families to one another. In this model, price levels are no longer the dynamic element in the housing "market". Moves fit together in chains of cause and effect identified by the careers of *vacancies*.

Keeping men paired to jobs over time is a similar process. Consider a system of men and jobs wherein each job is to be filled by one man and each man holds but one job. A large bureaucracy with a well-defined table of organization would be such a system, another could be higher strata of skilled jobs and managerial positions in the companies in some industry, and a third could be all jobs in a given specialty — say computer programmers — across a whole economy. The departure of men from the system is treated as an exogenous process, partly dependent on the age structure through death and retirement, and partly on the attractions of careers in other systems. Jobs, like men, are identifiable individuals which are constantly entering and leaving the system. The entry of jobs is a second exo-

genous process which may reflect the state of the economy, technological change, plans for growth, and so on. The basic dynamic assumption is asymmetric; an unoccupied job can draw a man from his tenure in another job, but an unoccupied man cannot draw a job from its tenure with another man. Specific opportunities can pull men out of jobs but they cannot be pushed out by newcomers. Moves occur in chains, each man filling the vacant job left by the move of his predecessor to still another vacant job. A chain can end either because a newcomer is called from outside the system to fill its last vacancy or because this job is abandoned and leaves the system. Jobless men have no active role in such a system, which comprises at any given time a set of tenures plus some jobs temporarily vacant.[4]

In either system, each chain of moves can be seen as the career of an identifiable vacancy in the system. Interaction among individuals is the core problem in analyzing mobility. Predicting moves of vacancies rather than moves of particular individuals eliminates one level of interaction, the sequential constraint imposed by the fact that until the current occupant has left a site no new occupant can move in. Markov models of vacancy moves will be sketched here for a housing system. Similar models have proved successful for job mobility in large organizations. Such models show that investments in new housing or jobs have multiplier effects on the total mobility process.

Independent flows and vacancy chains in housing systems

New houses are built by investors, not by their first occupants, in all save a tiny fraction of cases. These investors in part try to anticipate consumer desires, but their predictions cannot be made with accuracy. Most new houses must attract families already ensconced in the huge existing stock of houses rather than some easily identifiable stream of newly founded families. Investors also are responding to pressures quite independent of consumer desires: to interest rates, to tax advantages, to alternative opportunities in commercial building. The stream of new houses can be treated as a flow relatively independent of the exact state of any current "housing market" in that area. Treat it as an exogenous variable which can change arbitrarily regardless of the state of the housing system (later this flow is designated as F_h). The system is the population of houses and their occupants in given metropolitan areas.

On the side of families it is flows *out* of the housing system which tends to be independent of the state of the system. Death is not affected by the demand for housing, nor is the sudden loss of income attendant upon retirement. A widow or widower will not always and promptly vacate a house, nor will a retired couple, but the tendency is strong, and more important it is little affected by nuances in the current housing system. Moves of families from one city to another must be included as the equivalent of death in a local system. They are almost invariably tied to changes in job and thus also are nearly independent of the housing situation in the city left behind. All these flows of families out of a local system can be treated as one aggregate flow (designated later as F_m).

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[4]For a similar qualitative picture of job mobility see L. Reynolds, The Structure of Labor Markets, Harper and Row, 1951, esp. pp. 212, 240-246.

These two flows of houses and families, though opposite in physical direction, add together to measure the volume of opportunity to move introduced into the local housing system. (Later this sum is designated simply as F.) It is the size of this total flow of vacancies (and its distribution among types of houses) which determines the amount of movement as well as the net changes in stocks of houses and families.

A family controls the disposition of the house it occupies, with few exceptions, even if ownership is not complete. It can leave voluntarily but cannot be forced out. By the same token the family cannot force its way into occupancy of another house. Each move into a house is contingent upon the prior occupants having voluntarily moved to another house, whose occupants in turn. . . Moves follow one another in chains. The beginning of a chain is either the "death" of a family in an existing house or the creation of a new house. The number of chains formed annually equals the total flow of new opportunity into the system. The average length of a chain is the *multiplier*, the total number of moves caused by the initial arrival of a vacancy.

The various logical alternatives to vacancy chains are not plausible. If housing and families were centrally controlled it is conceivable that elaborate circles of simultaneous changes could be arranged. There would be no vacancy in any house and no period without housing for any family. Even in a company town it is doubtful that such an orderly allocation scheme would be workable. Another logical possibility has been rejected earlier: if a family could preempt a house from the present occupants then the interaction in a chain of moves would take the form of "bumps", periods without housing while an ejected family searched for another place.

The main alternative to vacancy chains is a "market" for matchmaking: families leave houses before they have located a new place so that at any given time a pool of vacant houses and a pool of unsettled families confront each other. When families spontaneously left houses an addition would flow into each pool. No longer would new houses and deaths be the cause of mobility by opening up the possibility for chains of moves. Such matchmaking situations could only arise when there is a large surplus of available houses of all kinds. A family's need for housing is pressing and continuous enough to make them reluctant to leave a house voluntarily without assurance of another being available. Even given surplus housing, matchmaking is unlikely. If other houses are surplus it will be clear one's own will be hard to sell. Most owners have mortgages, in any case, and until they have sold their existing house they are unlikely to have the means to enter matchmaking pools.

Apartments have not been mentioned. The evidence suggests they and their occupants may be best treated as a separate system. Families, or more generally households, usually begin living in apartments and many spend long periods there. Late in its life cycle a family may move into an apartment. But they are unlikely to switch back and forth between apartments and houses.

Flows which terminate vacancy chains in the housing system are dependent in volume on the state of the system, unlike the flows of new houses and of deaths which initiate chains of moves. These dependencies in part are viable because of the existence of the more flexible apartment system. Consider the flow of new living groups — most often married couples but also other groups of kin or friends—

into the system of houses. The argument is that the volume of this flow depends on the number of houses available, the number of vacancies active in chains at that period. Yet obviously the number of new couples formed per year is in large part a demographic and cultural fact rather independent of the availability of housing space. Any gap between the flow of available vacancies in houses and the flow of new households can be seen as accomodated in apartments or by doubling up in homes of kin.

The other dependent flow is of houses leaving the system by demolition, abandonment, etc. There is no definite lifespans for a given group or type of house. It is plausible that the proportion of houses abandoned depends on the number of houses vacant in the current state of the system. Furthermore, abandonment of an individual house is unlikely to be considered until after the current occupants have moved out.

A simple picture of housing dynamics emerges. Families adjust to evolving needs by moving to vacancies, each vacancy being originally created either by a death or by construction of a new house. Vacancies jump from house to house until extinguished either by recruitment of a family from outside the system or by a house's being abandoned, removed from the system. Once the vacancy jumps and extinctions can be predicted then mobility and change in the housing system can be predicted from the rates of creation of vacancies.

Lansing, Clifton and Morgan trace over 1000 vacancy chains initiated by a national sample of new housing units (40% apartments, 60% houses).[5] Each chain had to be established by interviews with the new occupants of a mover's previous home, at successive steps. The average length of chains begun by new houses was over 4.0, which shows the magnitude of the multiplier effect (apartments are included in the system to which this figure refers).

The observed fraction of vacancy chains terminated at their first step is less than a quarter and rises to over thirty per cent beyond the fourth step. Overall, about twenty per cent of all the chains end by demolition of the housing unit or the like. Half of the chains end by recruiting newly married couples from their parents' houses. The remainder end by recruitment of people, mostly young, who also do not leave behind vacant housing units in the U. S. They report, after comparison of national housing statistics with their own data, that about half of all moves in U. S. housing lie in chains set off by new housing. The other half are moves set off by deaths of families.

Markov models for vacancy moves

Consider a vacancy created in a high-priced house by the retirement of its owners (who rent an apartment in Florida and thus leave the system). Suppose the chance is 0.46 that the next occupants move into this house from another high-priced house: in addition, one-third of the time such a vacancy is filled by a newly prosperous family who leave behind a medium-priced house; and in only three per cent of such vacancy moves have the new owners made the big jump from a low-priced house.

[5] J. B. Lansing. C. W. Clifton and J. Morgan, New Homes and Poor People, Survey Research Center. University of Michigan, Ann Arbor, 1969.

The remaining possible destinations for the vacancy, which add up to eighteen per cent of moves from the high-priced stratum, are that it is filled by a new family from outside the system — say English immigrants — or that the house is torn down — say to make way for a luxury apartment building.

Nearly half the time the original vacancy finds itself again in a high-priced house. Exactly the same chances of various destinations should apply to its next move: the people filling a vacancy care little what its previous owners did with themselves. But a third of the time the original vacancy turns up in a medium-priced house: its changes of moving to the various strata will be quite different. Some orderly array of these various transition probabilities must be written down (see Table 1).

TABLE 1. CHANCES OF JUMPING TO VARIOUS DESTINA-
TIONS FOR A VACANCY IN EACH OF THREE PRICE
RANGES

Origin	Destination			
	High	Medium	Low	Outside
High	0.46	0.33	0.03	0.18
Medium	0.08	0.44	0.11	0.37
Low	0.06	0.20	0.22	0.53

In the text the first three columns are treated as a square matrix, called Q; the last column is treated as a column vector called p.

The same vacancy can jump repeatedly from one stratum to another, or to a different house in the same stratum, before it finally leaves the system. Only when the vacancy is resting in a low-priced house are the odds greater than fifty-fifty that its next move will be outside the system. The odds are great then both because it is cheap houses that attract the bulk of young couples just entering the house system and because cheaper houses are more likely to be run down and thus subject to demolition or being left empty. A vacancy after jumping from a high to a lower priced house can then jump back again: the chances of the reverse jumps (the lower left entries in Table 1) naturally tend to be small because families tend to buy up if they change price range at all.

A probability has been assigned to all the houses within a stratum taken together as one possible destination of the next move by a vacancy from a given stratum. A vacant house thus has a fixed probability of calling a replacement from each stratum of filled houses, but these probabilities need not be proportional to the numbers of houses. Nor need one assume each incumbent family in a destination stratum has the same chance of receiving the call.

Matrix algebra is the easy way to calculate the probabilities of various chains of moves by a vacancy. Take just the first three columns of Table 1 and regard them

as a square matrix; call it Q. Call the third column p; it is a vector with three entries. In the matrix Q raised to the power $j-1$ the entry in the ith row and the kth column is the sum of the probabilities of the various sequences of $j-1$ moves which begin in stratum i and end in stratum k, each such probability being simply a product of the appropriate transition probabilities. The product of the ith row of Q^{j-1} and the column vector p is the probability that a chain begun in stratum i will end in exactly j moves. That is, Q^{j-1} p gives the probability a chain is of length j for vacancies created in each of the three strata.

The *multiplier matrix* is the sum of all the powers of Q and counts the expected number of times a vacancy created in one stratum will appear in each stratum in the course of its chain of moves before it leaves the system. Table 2 is the multiplier matrix corresponding to Table 1. For example, a vacancy

TABLE 2. THE MULTIPLIER MATRIX FOR TABLE 1

	High	Medium	Low
High	2.08	1.32	0.25
Medium	0.35	2.10	0.29
Low	0.24	0.62	1.36

In each row appear the numbers of times a vacancy created in that stratum will appear, on the average, in the three strata. The sum of entries in a row is therefore the average length of a vacancy chain begun in that stratum. The matrix is calculated by inverting another matrix: specifically it equals $(I-Q)^{-1}$, where Q is defined in Table 1 and I is the identity matrix with unities on the main diagonal and zeros elsewhere.

created in the low-price stratum appears only 0.24 times in the top stratum. But a vacancy which arrives in the high-price stratum will appear there 1.08 additional times on the average, and it will also appear 1.32 times in the medium priced stratum and 0.25 times in the medium priced stratum and 0.25 times in the low-price stratum. The sum of these last three numbers, 3.65, is of course just the expected length of the total chain of moves begun by creating a vacancy in the high-price stratum. The average length of chains begun in the medium stratum is just the sum of the second row in Table 2, namely 2.74; while the average length of chain begun in the low-price stratum is only 2.22.

The distribution of vacancy creations among strata will vary from year to year, and even season to season. But there is little reason to expect the probabilities in Table 1 and thus the counts in Table 2 to vary much over time. Hence one can predict the effects on total mobility of policy changes or anticipated shifts in the economy simply by estimating what the corresponding changes in the creations of vacancies will be.

All vacancies in the system are assumed to move independently of one another and in conformity with the same probability model. To simplify the model, treat arrivals of vacancies as successive yearly cohorts, each of which has left the system before the next cohort arrives. Represent by $F(t)$ the number of vacancies arriving, as the cohort for year t, with the row vector $F(t)$ giving the breakdown by stratum. $F(t)$ is the sum of two flows of vacancies, newly built houses and houses vacated by families leaving the system, designated by $F_h(t)$ and $F_m(t)$ respectively.

Suppose in one year only twenty-one per cent of all creations of vacancies are in high-price houses (from both building new houses and deaths, etc. of incumbents);

forty-five per cent are in the medium stratum, and then thirty-four per cent are in low-price houses. That is, F is (0.21, 0.45, 0.34), then the percentage of all vacancy chains begun that year which are of length J can be computed as $F \, Q^{J-1} p$. The result is that 39 per cent of all chains are length 1 (the vacancy leaves the system on its first move); 22 per cent are length 2; 14 per cent length three; 9 per cent are length 4; and the percentage keep falling until only 1 per cent of all chains are of length 10.

The average length of all chains in this cohort, which measures the overall multiplier effect, is 2.75. In a subsequent year the pattern of creations may change: say most new houses that year are built as inexpensive tract homes. Then the total number of moves created, the average length of a chain times the number of chains, will be much lower, even though the propensities to move estimated in Table 1 remain the same. The distribution of chain lengths will also be quite different. More important, there will be major changes in what fractions of the total moves are extracted from the various strata.

THE VALID OPERATIONALISATION OF CONCEPTS*

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As the emphasis in the social sciences changes from descriptive research with fairly simple concepts to theoretical-explanatory research with theoretical concepts, the problem of the valid operationalisation of concepts increases in importance.

In dealing with the problems of operationalisation, our starting point is the essential differences in the various types of concepts. A good point of departure was Kaplan's classification, dividing concepts into "concreta", "illata", "abstracta" and "theoretical constructa". The framework of sociological concepts consists mainly of abstracta and theoretical constructa.

The characteristic of abstracta is a closed meaning developed by the researcher by nominal and stipulative means (Table 1). In allocating a meaning to abstracta, the research worker will usually be guided by the colloquial meaning. Examples of abstracta are: "use of leisure time", "group cohesion" and "population density".

The theoretical concepts are characterised by their open meaning, realistic in its nature and acquiring specific significance only in a theoretical context. In allocating meaning, the researcher will have to be guided partly by the results of empirical research. He can do so because the theoretical concepts themselves are theories, theories about the coherence of properties in reality. Examples of theoretical concepts are: "political apathy", "assimilation" and "integration".

The operationalisation problems of abstracta are not problematical. The specification of the meaning is usually already embodied in the definition, while their application in sociological research involves few problems. Where difficulties do occur, they are mainly of a technical nature.

The operationalisation of theoretical concepts is always problematical, at the level of specification and at the level of application in research. The vital question is always: is there enough equivalence in meaning between operationalisations applied in research and the theoretical concept intended by the researcher?

In our study we are concerned primarily with the problems of valid operationalisation of *theoretical concepts*.

In assessing problems of validity it is essential to distinguish properly between problems of reliability and of validity.

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* This paper was originally a summary to a Ph. D. thesis of the same name.

TABLE 1. DIFFERENCES BETWEEN ABSTRACTA AND THEORETICAL CONCEPTS

	Abstracta	*Theoretical concepts*
Meaning	abstract, but defined in concreta	very abstract, not definable in concreta
	meaning limited to the meaning of the concreta in the definiens	surplusmeaning to the meaning of the defiens
	atomistic	connected with the meaning of the theories of the first and second order
	closed	open
	introduced per definition	postulated for one specific research but otherwise dependent on the confirmation of the theory of the first and second order
Definition	nominal	real
	stipulative	theoretical
Operationalisation	definitional, no problems of the validity of the specification	hypothetical, problems of validity
Function of the operationalisation	connected with the direct object of observation	means to study a social phenomenon

TABLE 2. OPERATIONALISATION FROM THE THEORETICAL TO THE EMPIRICAL LANGUAGE

Theoretical language	*Empirical language*
A. Theoretical concept-as-intended	D. Empirical variable-as-determined, usually an index
B. Properties or dimensions	E. Empirical dimensions
C. Specification of dimensions in concreta ⟶	F. Empirical specifications or indicators
	G. Instrumental determinations of indicators or items
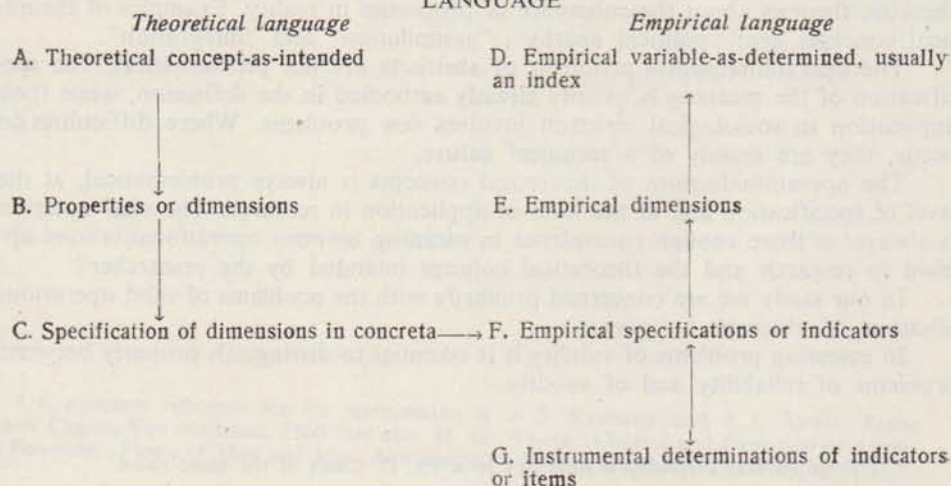
The *reliability* of research may be defined as the extent to which the results are independent of its technical effectuation. The *validity* of research is defined as the extent to which theoretical concepts, viewed as theories, possess reality and explanatory values towards properties in reality, and the extent to which operationali-

TABLE 3. TYPES OF VALIDITY TESTS

Deductive test	Inductive tests		
	Internal validity	Substantive validity (=logical validity)	'Face-validity / Content-validity
		Structural validity	Tests of consistency / Multi-variate analysis
Construct validity	External validity	External validity (=pragmatic or empirical validity)	Predictive validity / Post-or-retrodictive validity / Congruent validity / Concurrent validity

sations correspond in meaning with theoretical concepts. The question of reliability relates to the technical purport of research, that of validity leads to methodological reflection concerning the value of theoretical concepts.

In the literature, the term validity is also given another meaning. There is reference, for instance, to valid knowledge or to a valid theory. But we can speak of valid knowledge only if we know of connections between facts or their explanations by empirical research planned and carried out in a valid and reliable manner. Reliability and validity of research thus become conditions for acquiring valid knowledge. Our study is not concerned with the problems of valid knowledge, but with those of the validity of research.

The distinction we have made between reliability and validity of research is often disregarded in practice. The reason is the close coherence between these two concepts, while the tests overlap. It is nevertheless as well to distinguish between the two concepts: better appreciation of the nature of possible errors may benefit research.

In defining the validity of research we have defined two elements: the validity of the concept (its reality and explanatory values) and the validity of operationalisation. Although our study has devoted attention primarily to the validity of operationalisation, the validity of the concept still plays a part in our considerations. At the end of our study we show that we can pay attention to both elements of validity problems only with one type of validity test, i. e. the construct-validity test. With any other type of test we make only a partial approach to the validity problem.

We have said that theoretical concepts are themselves theories. At the same time, however, they form part of a nomological network, in which they are the ma-

terials for building a set of theories. To avoid any misunderstanding about the use of the term "theory" we call the theories, whose theoretical concepts consist of basic materials, theories of the first order and those, forming the basis for defining theoretical concepts, theories of the second order. With first-order theories the question of the explanatory value of a concept is important: can a concept viewed in a given way have an explanatory function within a theory? With second-order theories, the question of reality value plays a part. Our definition of a theoretical concept includes a number of properties which we assume to be related also in reality. The theory (of the second order) concerning this coherence can be tested empirically.

Lastly, we arrive at the theory regarding the equivalence between the meaning of a concept and the meaning of operationalisation. This theory we call the theory of the third order. With the construct-validity test, these three theories are tested simultaneously.

For assessing valid operationalisation, a distinction must be made between the various aspects of meaning of theoretical concepts. A theoretical concept has three such elements: functional, semantic and structural. The semantic aspect relates to the substantive meaning of a concept. Its structural meaning is revealed in the model on which we base a concept. This model consists of a given relationship between the dimensions of a concept. The functional aspect is, lastly, not so immediately obvious in the definition of a concept as the other two elements. Its functional meaning only becomes clear in the theoretical context comprising a concept and has its counterpart in the semantic and structural meaning. Approach to the functional meaning leads to an evaluation of the theoretical concept meaning, giving rise to the question: can a concept viewed semantically in a specific way and constructed in a specific manner have an explanatory function within one specific theory? In our study we have shown with examples that owing to concentration upon functional meaning, concepts are often defined differently both semantically *and* structurally than was possible without this point of departure. This is because the explanatory objective of a concept influences the allocation of meaning; an aspect which is usually disregarded by the inductive approach to the problem of meaning.

Our validity assessment of theoretical concepts proceeds from a theory concerning the equivalence in meaning of a theoretical concept and operationalisation. This has implicitly reduced the problems of valid operationalisation to a problem of translating from scientific into empirical language. Scientific language uses concepts which we define in fairly abstract terms. Next we specify meanings until they are expressed as concreta (terms relating to observable objects). We then take these concreta (still forming part of scientific language, the language of concepts) as the basis for constructing variables. The variables form part of empirical language. These variables can get values (scores) in empirical language.

Empirical language also has various subdivisions.

The actual research questions, often statements, are called items; the total score of a variable is usually expressed as an index. This entire structure of specification and operationalisation in the language of research is given on Table 2. The problems of valid operationalisation can be assessed at the highest level in both languages and then relates to the similarity in meaning between the theoretical concept-as-intended and the empirical variable-as-determined (relation *A-D*).

It is, however, also possible and in practical research often necessary to focus validity assessment upon given components of an entire structure.

For this validity assessment attention will, of course, always have to be concentrated upon equivalence of meaning functionally, semantically and structurally.
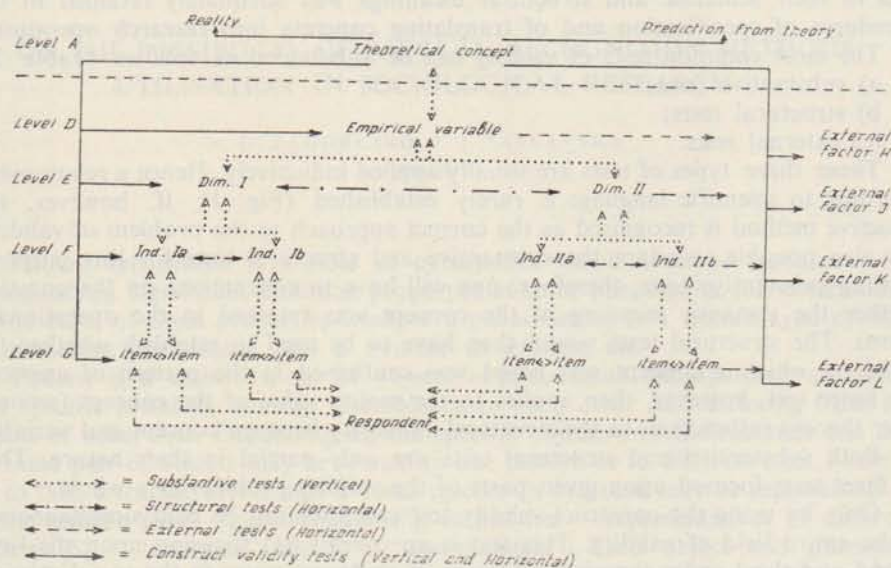
Fig. 1. Tests of validity in the figure of levels of operationalisation

The problem of validity has been studied in the literature both by methodologists (Carnap, Vercruijsse) and by research workers (Lazarsfeld, Nowak). Methodologists, especially Carnap, concentrated on translating theoretical concepts into concreta. Carnap, however, continues to use scientific language. Hence, it is not adequately expressed that meaning can still be influenced during research by using given research procedures or by the respondents' frames of reference.

Research workers, however, have often only approached the problem of valid operationalisation within empirical language. In using item analysis or consistency tests one remains within empirical language. Relationships are established inductively between answer patterns; usually, the relation between scientific and empirical language is not investigated.

Although the inductive method — we also have in mind the use of higher analysis techniques such as factor analysis and cluster analysis — is very important in opening up new fields of research, we believe that it is inadequate for assessment of the validity question. With this method, for instance, no attention can be paid to the functional meaning of a concept, since this is closely related to the theoretical research objective; this implies that the functional meaning can never be inferred from the inductive relationships. Another problem which cannot receive any atten-

tion with the inductuve method is that of the surplus meaning[1] of theoretical concepts.

The problem of valid operationalisation of theoretical concepts can in our opinion only be approached from the above meaning of the concepts. Only then can it be judged whether the functional meaning established in defining the concepts in their semantic and structural meanings was adequately retained in the procedures of specification and of translating concreta into research operations.

The most common tests of validity can be subdivided as follows (Table 3):
a) substantive tests;
b) structural tests;
(c) external tests.

These three types of tests are usually applied inductively. Hence a relationship according to scientific language is rarely established (Fig. 1). If, however, the deductive method is recognised as the correct approach to the problem of validity, it is also possible to adapt the substantive and structural tests for this purpose. In using substantive tests, therefore, one will have to concentrate on the question whether the semantic meaning of the concept was retained in the operationalisations. The structural tests would then have to be used to establish whether the model on which a concept was based was confirmed in the pattern of answers. The latter test, however, then applies to the reality value of the concept (second-order theory) rather than to the structural similarity between concept and variable.

Both substantive and structural tests are only partial in their nature. They are facet tests focused upon given parts of the validity problem as a whole.

Only by using the construct-validity test can attention be paid simultaneously to the entire field of validity. This test is an overall test focusing upon the first, second and third order theories. All forms of evidence known to the social sciences can be used within this test.

The idea of construct-validity, however, is no deus ex machina which has suddenly solved the almost inextricable problems of validation. The advantage of using construct validity is that the research worker is oriented more upon the coherence of the problems of validity. Understanding of the influence of functional meaning on semantic and structural meanings of theoretical concepts, attention to the explanatory and reality values of theoretical concepts, the distinction between theoretical and empirical language enables him to approach the validity test deductively. Construct-validity makes available for testing all the steps in decisions which a research worker has to take and thereby brings about greater awareness of the entire procedure of operationalisation.

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[1] A surplus meaning of theoretical concepts may de defined as a meaning surplus to the total meanings of the operationalisations.

ON THE POSSIBILITY OF PATTERN RECOGNITION METHODS
UTILISATION IN SOCIOLOGICAL RESEARCH

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Pattern recognition is a field of cybernetics which develops techniques for distinguishing significant common properties of some phenomena, for determining on the basis of these properties whether a phenomenon is a known type or not, for clustering phenomena into a number of groups, etc.

Pattern is a name of a set of objects or phenomena distinguished according to a specific problem, bearing resemblance to each other and differing from the objects of other sets. Depending on the specific objective of the research one and the same pair of objects may be related to one pattern or to different ones. According to this, a tractor driver and a rural teacher in one case may be representatives of one pattern (S_1 — "rural residents"), in another — representatives of different patterns (S_1 — "manuals" and S_2 — "non-manuals"). Each object and phenomenon Z from the set S_i is described by X set of properties $x_1, x_2,....., x_n$ and a point in the space of these properties. The points of one pattern in the property space are a set with some or other structure. Sometimes the distinction of a structure is in that the objects of the same pattern are mapped in the property space into the points which are close to each other or into a "solid" cloud of points. In other cases the structure of a set of points of one pattern may be of a more complex character.

The rule (D) by which an unknown ("check") realization is identified as some or other pattern is called a "decision rule" or a "decision function".

These elements (a list of K patterns $S = \{S_1, S_2,..., S_k\}$, which are to be discriminated, n-dimensional property-space $X = \{x_1, x_2,..., x_n\}$ and the decision-function (D) are available in some form in any recognition problem.

Depending on which of these elements are given and which are to be found the problems dealt with by the designer of recognition machines, or algorithms, may be classified into *3 major types of pattern recognition* problems.

In a problem of the *1st type* given are the set of patterns to be recognized (S), the set of differentiating properties (X) for describing the set of objects Z and the set of objects Z_{ob} whose identity with some or other pattern is known. It is necessary to form a decision function D which would allow to identify correctly not only the objects of Z_{ob} with their patterns but other objects of the set Z as well.

The cost of recognition errors and the cost of recognizing algorithms may be evaluated by some N value of costs. Admissible costs N_o are also given. The decision function D must provide for minimum of these costs.

In forming the decision function (i. e. in the process of "learning") the machine has no information about check sequence. According to some hypothesis Γ about the nature of regularity in the structure of learning sample and about the relationship between the learning and check samples, it must find in the set V of various decision rules such rule D which would provide good recognition of the learning sample. If the hypothesis is correct, D_V minimizes recognition and check realizations errors. If V is the number of the decision function, the task of the 1st type is in the search for D_V at which the following condition is fulfilled:

$$V = \text{argu} \min_{V=1 \div V} N\ (D_V)/S,\ X,\ Z_{ob},\ \Gamma,\ N_o$$

Most of available algorithms of D_V construction are oriented at the hypothesis of "solidity" [1]. If the points of one pattern are concentrated into a "solid" cloud which is not overlapped by "solid" sets of the points of other patterns, the decision function may be some hypersurface separating one-relation area into which are mapped the points of one pattern, of both learning and, hopefully, check samples. In the simplest case the hypersurface will be a plane delimiting the space, or a sphere circumscribed around the concentration of points of learning sequence. If the shape of these concentrations is more complex, for instance ellipsoidal, then the boundary will be a surface of the second order. The methods used in these cases have been borrowed from the probability theory and mathematical statistics [2].

Of algorithms for recognition of patterns which are distributed in a more complicated way, a method of "potential functions" [3] and of "splintering standards" [4] may be noted. The complexity of distribution (bizarre boundaries) is an indication that either the sample is not representative, or the properties have been chosen unsuccessfully.

The hypothesis of "the simplicity of structural regularities" [5, 6] assumes the construction of a decision rule describing special features in the structure of the set of points in the given pattern. The points may lie by no means "solidly" beside each other, but if there is some regularity in their array it should attract the attention. In order to secure the regularity against the influence of arbitrariness because of choosing scales of devices which measure properties, the isomorphism between the considered system with relations and the numerical model of this system is required [7]. It means that whatever symbols are used as scale markings, e. g. of weights, it is necessary that between the symbols a, b and c denoting weights 2, 3 and 5 kg, respectively, the relation $a+b=c$ should be true.

Each system of properties X may be put into correspondence with the system of relations $<R_1,...,\ R_n>$. Then the properties of each element Z from the set S_i, its role in the structure of this set in the property space X are entirely determined by a set of relations of $<R_1,...,R_n>$ type between the element Z and all other elements of the set S_i. And the properties of the set S_i as a whole, the nature of its structure are determined by the set of relations of the same type between all the elements from S_i. Those relations which are true for one set and which are wrong for others serve as invariant characteristics of this set. The more of such characteristics the set has, the more meaningful, the simpler its structure.

The decision about identification of the check realization is made in favour of that pattern after joining to which the regularity found on the learning sample is retained to the highest degree or even is manifested still clearer.

First algorithms based on the hypothesis of simplicity have displayed higher universality in comparison with the algorithms based on the hypothesis of solidity [8].

The problem of the IInd type is the search for the best system of informative properties X which would allow correctly identify the objects from Z with some or other given pattern S with the help of the decision function D of the given type. In the problems of this type known are, besides D, S and Z_{ob}, permissible value of costs N_o which is composed of recognition error cost and properties measurement cost, and some hypothesis Γ about the nature of relationship of the learning sample structure to the structure of general population. If it is possible to try B various property systems, one should stop on that system X_β which satisfies the condition

$$\beta = \text{argu} \min_{\beta = 1 \div B} N (X_\beta)/S, D, \Gamma, Z_{ob}, N_o$$

What properties are to be included into these B sets is determined by a practitioner in that field where this problem is being solved. So far, formal techniques for selecting an initial system has not yet existed. Mathematical apparatus allows only to select from B initial systems a best, most informative system of properties, to test whether it is *sufficient*, and if so, whether all properties in it are *necessary*. Methods used for solving this problem (method of random search with adaptation (RSA) [9], method of tests [10]) allow to exclude from the system not very informative properties, to rank them according to their relative significance.

In the method of tests intended for studying binary properties that property is considered most significant which enters most of deadlock discriminating matrices or minimal disjunctive normal forms.

The method of RSA is based on the following idea. Let it be necessary from q properties of the initial system X_q to select $n \leq q$ of most informative properties, i. e. the best system X_n.

At first some (r) random trials are made, and each selected X_n system is evaluated on the basis of some quality criterion F. Then the properties which formerly entered the system X'_n of r systems are "encouraged", i. e. the probability for them to be selected on the subsequent steps increases by some magnitude. And those properties which formerly entered the worst set X''_n are "punished", i. e. the probability that at subsequent random selections they will get into the set X_n decreases. The procedure of random selection, evaluation of property and adaptation continue till the probability of selection of some n properties increases so much that at further steps only this system X_n is selected.

The tests have shown high effectiveness of RSA method. For fixed machine this algorithm would select more informative system than other known algorithms.

The selection of some or other X_n system depends on the quality criterion F, i. e. on the objective which we desire to attain by use of selected properties. Different objectives may be stated, e. g. such ones: "to select X_n system which would allow to recognize the check sequence to the given accuracy"; "to select X_n system which would allow to describe the structure of general population by using

a most concise language"; "to select X_n system of properties which are the most correlated with some target function".

Often it is important to know an inner structure of some set (Z), i. e. to know whether this set is homogeneous mass or its structure contains some local subsets of individuals or objects "similar" to each other or regularly related to each other. The ways for detecting such subsets ("taxons") is the object in solving the problems of the IIIrd type — the problems of "taxonomy". In this problem known are: property space X, initial set of elements Z, desirable number of taxons K, hypothesis Γ about possible regularities in taxon structure and preconditioned by this hypothesis type of decision function D by which the elements of one taxon might be distinguished from the elements of other taxons.

If there is a way for evaluation of the quality of taxonomy F, then the larger F, the smaller the costs associated with loss of information unavoidable at grouping procedure. At the expense of these losses we obtain a possibility to describe in a simple way the structure of the set of investigated objects.

The total costs N minimized in the task of taxonomy are the smaller, the higher, on the one hand, the quality of taxonomy F, and the more simple, on the other, the description of the obtained result of taxonomy.

Of Ω versions of taxonomy it is necessary to select such S_ω for which the following condition is satisfied:

$$\omega = \text{argu} \min_{\omega=1 \div \Omega} N\ (S_\omega)/X,\ D,\ \Gamma,\ Z,\ K,\ N_o$$

If the hypothesis of "solidity" serves as assumptions, then the more "solid" the subsets of elements in the taxon, the higher the quality of taxonomy F.

This hypothesis is the basis for the algorithms of taxonomy of "Forel" series [11]. By means of the algorithm "Forel-1" the spherical taxons are distinguished. The centre of the hypersphere of the given radius moves into the area of the largest concentration of points and stops at the global or local extremity of the distribution density of the points of Z set. Then the second hypersphere which searches another concentration of points is put in, etc. till all points of Z are inside the hyperspheres. The longer the radius R of the sphere, the less number of taxons is distinguished by the algorithm. Consequently, by changing R it is possible to obtain the given number of taxons K.

More perfect is the algorithm of taxonomy "Crab" [12] giving a response to a more complex character of structural regularities.It makes it possible to distinguish "chain", "spiral-shaped" taxons, etc. At first all points of the set Z are connected in a shortest unclosed way. Using an intermediate criterion, the probability is evaluated for the boundary to pass between the taxons on some or other part of this path. The parts of maximum probability are partitioned and the quality of taxonomy obtained in this partitioning is evaluated. Of Ω versions, selected is such at which the regularities of taxon stucture will be most clear and distinctive. In particular, if the set actually breaks down into isolated "solid" concentrations, then such taxons as possessing the simplest structure will be distinguished in the first place.

In sociology all these types of tasks may be encountered. Assume, for instance, that in studying rural population migration processes, the list of patterns recognized consists of the following elements:

1. S_1 — a group of rural residents who are steadily oriented at the life in the countryside.
2. S_2 —a group of the "hesitating", i. e. potential migrants.
3. S_3 —a group of inhabitants who firmly determined to move from the countryside to the city.

Learning sample (Z_{ob}) is the information about some number of representatives of these three patterns. The information is usually contained in questionnaires having the responses no n indirect questions — X_1 — "age", X_2 — "educational background", X_3 — "satisfaction with work", etc. This is the system X_n. We shall assume that people of one pattern give approximately identical answers to the same questions (the hypothesis of "solidity"). Here the search for the decision function D consists in construction of a surface (hyperplane or hypersphere) delimiting the area of one pattern from the area of other patterns. Now to know on the basis of questionnaire replies whether this man is going to stay in the country or to move to the city it is sufficient to test into the area of what pattern his questionnaire (his point) is mapped into within the property space X_n. If the hypothesis of "solidity" is true for this case and if the learning sample was representative, then these check points will be adequately identified.

Applying the same information, it is possible to solve the task of the IInd type as well. One may receive an answer to such questions: whether there is sufficient information in the questionnaire in order to identify an individual with some or other pattern with the required reliability (test for sufficiency); whether it is possible to exclude some questions from the questionnaire (test for necessity); wo at properties bear most information about the investigated process or phenomhnon (test for relative significance).

e Now if all the questionnaires from learning and check samples are combined into a common set Z, with the help of algorithm of taxonomy, it is possible to know whether the partitioning of rural population into the three aforementioned patterns was legitimate. May be the structure of the set will become more evident and simple if five patterns instead of three were considered?

Members of the Institute of Economics and the Institute of Mathematics, Siberian Dept., the USSR Academy of Sciences, have solved some sociological tasks by applying pattern recognition methods [9].

The RSA algorithm was used for determining most significant properties by which it was possible to predict with highest accuracy the direction and intensity of labour migration between towns and villages of the Russian Federation. All provinces, regions and autonomous republics of the RSFSR (61 regions altogether) were considered. Into the initial system of properties x_q 50 properties were included with regard to income level and employment of the population, to housing and consumer services, climatic conditions of the region, etc. Two methods were compared: regression analysis (RA) and random search with adaptation (RSA).

The coefficient of multiple correlation between the intensity of migration and seven most significant properties selected by RSA method was equal 0.850 and RA — 0.826. Mean error in prediction of migration by seven properties selected by RA was 5.3% and by RSA — 4.8%.

With 12 variables in prediciton according to RSA we managed to reduce the error down to 3.8%. This accuracy may be held acceptable for planning calculations.

Several tasks have been solved by taxonomy methods. One of them is associated with designing a social sampling research.

For subsequent study at the 1st stage it was required to select some (approximately a half) of districts of the Novosibirsk province, and then, the IInd stage, to select some ($\approx 20\%$) of local soviets of these districts. With this purpose "Forel-1" worked in the space of such properties as number of rural population in a district, percentage of collective farm household, distance from the centre of province, etc. At the 1st stage altogether five properties have been used, and at the IInd — six properties.

As a result, 14 districts of 29 have been selected which were closest by their parameters to the centres of their taxons ("typical" districts). These districts have 185 local soviets of which 34 ("typical") have been selected on the basis of algorithm of taxonomy at the IInd stage. The inhabitants of these local soviets were then subjected to thorough sociological survey.

The second task in the field of taxonomy deals with *blocking of occupations*, i. e. separating groups in rural population having identical social position. Here were used such properties which are determined by major aspects of labour: skills (measured by training time), complexity of work according to assignments and physical conditions, social significance, supervisory or operative functions, etc.

The blocking of occupations in this property space was made by the algorithm "Forel-1". As a result, the distinguished groups were more homogeneous than the groups distinguished by other methods. Taxonomy methods have been used also for distinguishing groups of workers with similar kind of mobility and groups with similar degree of stability enterprise and occupation.

Further broader applications of pattern recognition in sociology are viewed in terms of algorithms and programs of solving tasks of combined type (which are now in progress), for instance, the task of simultaneous search for a grouping (taxonomy) suitable for some objective and a system of properties in whose space the structure of taxons would be the simplest (algorithm "SX" [12]) and the algorithms of recognition based on the hypothesis of "simple structural regularities".

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THE SCAMPEFFECT: SOME ASPECTS
OF THE PERFORMANCE OF INTERVIEWERS

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In the development of research methods in the social sciences more emphasis is laid at present on the phase of analysing than on the phase of collecting the data. We start from the assumption that the material to be analysed is mutually comparable and reliable. So when a choice must be made between the use of qualitative or standaroized interviews as a means of observation, the choice generally falls on the latter form. This paper is intended to make a contribution to the study of its accuracy.[1, 2]

Whereas in various fields of sociology quite a few complaints are heard about a shortage of empirical research, here there is rather an excess of it.

Here many minor studies are involved, sometimes by-products of a major study, sometimes specially conducted with a view to methodology. The team of research workers of the National Opinion Research Center (NORC), under the direction of Hyman, has gone to work more systematically (Hyman et al., 1954). Other standard books in this field are the books by König (1957), Kahn and Cannell (1957), Richardson et al. (1965) and Gorden (1969). An attempt at summarizing the existent literature was made by Scheuch (1967). However, as soon as we want to connect the various results, either from minor studies or from the standard works, we meet with the difficulty that there is no generally accepted model interview. For when we speak of "errors" in an interview, we must know what is meant by a "correct" interview.

A discussion in Public Opinion Quarterly clearly demonstrates the necessity of putting together the results of the study of interview reliability (Dohrenwend et al., 1969).

In this paper a report on an exploratory study of one of the central problems of the standardized interview will be discussed.[3]

1. Definition of the Problem

The instructions received by an interviewer in a standardized interview can roughly be divided into two categories:
— instructions concerning the questioning, introduction etc., on one hand,
— instructions concerning the rendering of answers and the filling in of forms, on the other hand.

Here only the first group will be discussed; regarding errors in rendering answers, several experiments have been conducted previously. In this way I come to the formulation of the problem: To what extent and under what conditions does the scampeffect occur in standardized interviews? By "scampeffect" I mean:

all deviations from the general and special instructions given by the research worker with regard to the questioning.

Only in a standardized interview can this effect be accurately determined and quantitatively expressed. Because a uniform terminology and sequence of the question is inherent to the essential characteristics of such an interview, we can enumerate the following indicators:
— unjustified omission of questions
— unjustified asking of questions
— altering the sequence of questions
— altering the wording of questions
— giving elucidations in questions where this is not allowed
— deviating from special instructions for certain questions (including, for instance, not or not correctly clarifying questions, refraining from probing, and so on).

Two notices on the term "scampeffect":

1. This new term is a refinement of the term "cheater problem". The element of conscious deceit is inherent to the term "cheating" or "deceit"; the "term"scampeffect" includes all deviations from the instructions, whether conscious or unconsious, big or small, important or without consequences for the course of the interview.

2. It must be emphasized that in this argumentation the terms "scampeffect" and "interview errors" have no evaluative meaning. It may very well be that a deviating phrasing of a question in a particular interview is even better than the official text. An example of this is the changing of the question "Are you married, single, widowed or divorced" into "You are married?". Such a variation in most cases will not lead to a distortion of the answer. Decisions on what does and what does not cause a distortion, remain higly subjective in the present state of knowledge of the reactions of the respondent.

[4] See for instance Smith, H. L. and H. Hyman, The biasing effect of interviewer expectations on survey results, in: Public Opinion Quarterly 14 (1950), 491-506, and Rijksen, P. and A. van Bergen, Interview reports, in: Nederlands Tijdschrift voor de Psychologie, 14 (1959), 58-69.

2. *Existent literature*

Little systematical research has been done up to now about the method of questioning in the standardized interview. For this I see two reasons: we can only measure via gross effects, so that research must be specially designed for it,[5] and it is not considered fair to doubt the honesty of one's own interviewers. Crespi has shown that the latter argument is wrong (Crespi, 1945, and Crespi, 1946); deviating from the instructions is not a matter of 'interviewers'morals' but of 'interviewers' morale'. So the remedy is not, to catch interviewers making errors and then to dismiss them, but to track down demoralizing factors and eliminate them as much as possible. The degree of cheating is difficult to estimate. The reason of this is partly that we understand by cheating not only the filling in of a complete interview protocol with fabricated answers, but also the skipping of parts of interviews or of individual questions.

Boyd and Westfall (1954) find that the numbers are greatly divergent, the percentages of dishonest interviewers ranging from 60% to 1%—5%. Riesman (1958) incidentally says about the interviewers for the study "Academic Mind": "we found no dishonest reporting on the side of the interviewers". Here it concerned a most intersting subject and the interviewers knew that the research workers knew some of the respondents personally.

In contrast hereto is the experience of Evans (1961) who discovered that four out of thirteen interviewers filled in the interview forms all by themselves.

The only conclusion we can draw from these contradictory data is that the degree of cheating is evidently greatly dependent on situational factors. We receive a little more support from certain experiments. Van Kemenade (1960) concluded his interview-training of sociology students with an experiment in which he himself played the role of respondent. The students took turns as interviewers. The whole experiment was recorded on tape and the number of errors in preestablished categories were counted.

It appeared that in 23% of the questions errors were made in asking them, with as principal categories: 5% errors in probing, 5% in not asking a question, and 8% asking a question vaguely or only partly. These errors are ascribed by Van Kemenade mostly to slovenliness, ignorance of the questionnaire, or ignorance of the meaning of individual questions. It remains to be seen, however, whether these figures and observations obtained in rather a special situation can be generalized.

Data about errors in interviews in a somewhat more realistic situation are supplied by the unpublished study of the American Jewish Committee, given in Hyman (pp. 177 seq.). In this case there was only one respodent who played an unchanging role and was questioned by fifteen interviewers. The interview was recorded by a hidden taperecorder. The result was an average of 26% of errors in asking questions, 26% of errors in probing and 8% of errors by skipping questions (always related to the total number of questions). If there is a difficul relation with the respondent, more errors are made, especially through skipping questions. Apart from this, however, there also appeared a kind of individual "aptitude" to making errors.

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[5]   See for the measuring of interviewer effects the article in Hyman c. s. (1954), chapter 2.

Other experiments, reproduced by Hyman c. s., point at the influence which training and experience have on the degree of probing and the length of the answers in open questions. Other studies also find interviewers differing in these respects.[6]

Summarizing we can only say that research of literature gives very greatly divergent results as to the amount of cheater effect, but that we can expect at least 25% of deviations in the questioning.

3. Hypotheses

From the literature quoted it becomes clearly evident that the investigation of the scamp effect must have an exploratory character. Nevertheless I wish to formulate a few hypotheses beforehand.

1. The more difficulties the situation offers, according to the view of the interviewer, the more often the scamp effect will occur.

2. In open questions the scamp effect will occur more frequently than in closed questions.

3. The more the interviewer's attitude is oriented on the earnings, the more frequently the scamp effect will occur.

These hypotheses have been formed on the basis of orientating discussions with directors of interviewing teams and with a few experienced interviewers (hyp. 3) and on the basis of literature mentioned (hyp. 1 and 2, especially Crespi, Van Kemenade and Hyman).

4. Method of research

In this study we have tried to learn the degree and character of the scamp effect in a natural situation. For this purpose it is necessary to observe the interviewer's behaviour during the act of interviewing. (The use of tape recorders is not yet so common in Holland, that it is a matter of course for the interviewers to bring one. The use of hidden tape recorders and microphones met with practical objections.)

In a natural interview situation only interviewers and respondents are present, usually in the home of the respondent. So the idea originated to attribute to the respondent a double role: that of respondent as well as observer.[7]

Around this central idea the following framework was set up: 24 interviewers were selected from the interviewing team of the Institutut for Psychologisch Markt — en Motievenonderzoek (IPM) at Schiedam. (The directors of the IPM were fully prepared to co-operate, even though it was expressly agreed beforehand that they were not going to receive any information about the performances of the individual interviewers.) These interviewers in the beginning were not aware that they were co-operating in a special investigation. Each interviewer received three addresses of respondents who had to be questioned by way of a questionnaire that had been used in a previous research. This questionnaire had reference to a publicity evaluation test for a new make of tooth paste. The list was not too long, and had a sufficient variation of open and closed questions, and scales of

[6] See for instance Friberg, L., E. Jonssen and L. Strandberg: Studies on interviewer effect on a medicohygienic interview survey, in Acta Sociologica 3 (1958), 1-7.
[7] This idea came from Prof. Vercruijsse.

measurement. The advantage of a subject taken from market research is that the interviewers are not particularly interested in the subject.

The addresses supplied were those of special respondents of whom the greater part came up to the requirements made for the original quota sample, namely women with family responsibilities between 20 and 45 years of age.

These respondents had previously agreed to co-operate and were in the possession of a questionnaire. They had been instructed to pay special attention to the way in which the interviewer asked the questions. So they acted as observers of the interviewer.

Immediately after the interviewer's visit the respondent had to note down in the questionnaire received previously which questions the interviewer had asked, whether any alterations had been made in the wording, etc.; in short: in what respects the interviewer had scamped. Since this requires accuracy of observation and memory, the respondents had to be found among women with a certain amount of schooling and interest in this field. Here women with sociological or psychological training had been preferred.

Afterwards this respondent was visited by the present writer or by an assistant who collected the questionnaire with notes and inquired further about the interview with the help of a short questionnaire. Finally the interviewers themselves received a visit in which factual information on experience and personal characteristics of the interviewer, his motives for interviewing, his opinion of the contacts with the office (IPM), of this questionnaire and of this special interview were discussed. One by one the questions were discussed in order to find out what difficulties they could cause in an interview. So this was rather an extensive discussion.

In summary, we have the following phases:

1. Contact with the IPM.
2. Choosing the questionnaire; having extra questionnaires printed; selecting 24 interviewers.
3. Selecting 72 respondents able and willing to co-operate.
4. Providing the interviewers with addresses through IPM.
5. The interviewers visit the respondents and send their protocols to the office, which transmits them to me.
6. Respondents are briefly interviewed.
7. Interviewers are interviewed at length.

The choice of the interviewers was left to the IPM, on the condition that not only the best or most experienced interviewers would be selected. Among the 24 interviewers 8 were students (mainly in the social sciences; third year at the university or senior; between 21 and 25 year old) and 12 housewives (of different ages and education; all having at least one child). Of the remaining four, three were men with a full time job elsewhere and one was a divorced woman without children. The interviewer training, at the same time selection procedure, at IPM consists of one introductory day in which instruction is given concerning interviewing. After that two trial interviews must be held in the town of residence of the interviewer. The instructions can be found in the instruction manual, and do not deviate from the usual ones used for semi-structured interviews.[8]

The degree of experience in interviewing work is shown on Table 1.

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[8] The training of interviewers at the IPM has meanwhile been considerably extended.

TABLE 1. EXPERIENCE IN INTERVIEWING WORK PER CATEGORY OF INTERVIEWERS

Category of interviewers	Students	Housewives	Others	Total
Experience				
Inexperienced (10 interv.)	5	2	3	10
Little experience (10-20 interv.)	1	5	—	6
Experienced (21-34 interv.)	1	3	—	4
Highly experienced (35 interv.)	1	2	1	4
Total	8	12	4	24

5. Results

Degree of scamping instructions

The number of errors in questioning per interview is shown in a bar chart (Table 2).

The smallest number of errors is 3, the largest number is 19. As there were 27 questions in the tooth paste interview and errors could also be made in the introduction, in the 1 minute interval and in showing the advertisements, this amounts to a percentage of errors of 10 to 63%. The average percentage is 33%. This is slightly higher than the results obtained by Van Kemenade and by the American Jewish Committee.[9]

It cannot be said that 33% of the questions have been wrongly put, for it was possible to make more than one error in one question. The observations of the respondents lead to distinguishing the following errors:

TABLE 2. BAR CHART OF THE ERRORS MADE IN QUESTIONING PER INTERVIEW
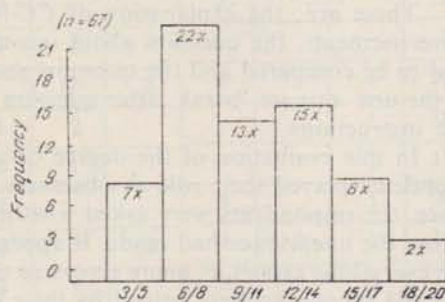
(n=57)

Average number of			Number of Errors	
errors	: 10		Maximum	19
Modus	: 12		Minimum	3
Median	: 10			

[9] It might be possible that this higher percentage of errors is caused by counting double the "unjustified omission of questions". When we make a calculation without this counting double, the percentage of errors still remains higher than in the studies mentioned, namely 30%. Of course it is quite possible that the difference is caused by a different measuring technique. In our opinion, however, it is also important for the interviewer that the situation is a natural one. In the experi-

    a. Unjustified omission of a question
    b. Unjustified asking of a question
    c. Formulation not literal or not complete
    d. Probing is omitted, insufficient or suggestive
    e. Suggestion by tone or attitude; answer not waited for
    f. Extra information was given, not according to instructions
    g. Sequence of questions altered
    h. Other errors, such as: showing the advertisements and cards in a way not according to the instructions; question clumsily put; attitude not natural.

Since the first error, omitting the question, excludes the making of other errors, this was always counted for two errors.[10] From Table 2 it appears that in the final evaluation 67 interviews were taken into consideration. The research involved 24 interviewers each doing 3 interviews, so that this should have resulted in 72 evaluated interviews. Five observations, however, could not be used as basis for conclusions. The (female) respondents/observers had confined themselves to a general evaluation and had not examined question by question whether the interviewer had followed his instructions.

The division of the number of errors per interview is remarkably even; there are few outstandingly good or bad interviewers; the total number of errors they make does not vary greatly. The average is 29 errors in three interviews.

We can also calculate the number of errors per question. This is shown in the "total" column of Table 3. Here we clearly see that the spreading of the errors over the various questions is very uneven. In particular, many errors were made in questions that were in some way or other exceptional, either because material had to be shown, or because they dealt with a precarious subject.

These are: the explanation of *CC*-form 1, the showing of the brochure with advertisements, the question about income, question 8-*a* where two advertisements had to be compared and the question about bad breath. The high number of errors at the one minute break after question *B*-1 is mainly due to ignoring this item of the instructions.

In this evaluation of the degree of scamping it can be asked how well the respondents played their role as observers. We have two checks on this. In the first place, the respondents were asked whether they had difficulty in remembering what errors the interviewer had made. It appears that those who found it easy to remember everything report as many errors as those to whom it gave great difficulty. Neither did those who were helped by their husbands in making notes report a greater number of errors.

In the second place there was one situation in which a hidden tape recorder was used.

ment of Van Kemenade the interviewers had a feeling of being supervised, they tried to cut a very good figure. The circumstances of the study by the American Jewish Committee are not known to us in detail, but in any case the interviewers knew that they were participating in an experiment. In our case the interviewers only felt vague suspicions. The increasing naturalness of the situation (as seen by the interviewer) corresponds with an increase in the percentage of errors.

[10] Of course, this way of measuring is entirely arbitrary. It is too little realised, however, that weighings in which equal weight is given to each element, are also based on arbitrary suppositions.

TABLE 3. NUMBTER AND NATURE OF ERRORS IN QUESTIONING PER QUESTION

Nature of error	a, b	c	d	e	f	g	h	Total (a and b counted double)
Question number : Introduction		1			8			9
A 1a Year of birth	1	3			3	11		19
A 1b Married or single	6	26				1		33
A 1c Education		2	4					6
A 1d Profession		26	1	2			1	30
A 1e Education of Husband		1		1				2
A 1f Profession of Husband	1	5	2					9
A 1g Size of Family	1	7			2			11
A 1h Income	8	4		2	17	1	5	45
A 2 Social Class	3				6			12
B 1 Showing of Advertisements	1	9			6	2	27	46
One minute break	26				2		4	58
B 1a)		16			3			19
B 1b)		3	4					7
B 1c) Opinion of Advertisements	2		17	2	1	1	1	26
B 2a)	1	11	2				1	16
B 2b)		9	1				2	12
B 3)	1	13			4		1	20
B 4) Completing Sentences, etc.		3		2	4	2	1	12
B 5)	1	2	1		3	2	3	13
B 6) Scales of Measurement		47		2			4	53
B 7)		22		1			2	25
B 8a)			44			1		45
B 8b) Open Questions on Product	5	5	14	1	5			35
B 9a)		20	5		1	1	1	28
B 9b Closed Question on Prod.		2		1	6		1	10
B 10a)		8	2	1	9		3	23
B 10b) Bad breath	3	4			18		16	44
B 10c)		2			2		4	8
Total	60	245	97	15	100	22	77	676

a = unjustified omission of a question ; b = unjustified asking of a question ; c = error in formulating a question ; d = error in probing ; e = suggestive attitude ; f = extra information ; g = error in sequence : h = other errors

TABLE 4. THE NUMBER OF ERRORS IN QUESTIONS
WITH AND WITHOUT DIFFICULTIES PER INTERVIEWER,
IN PERCENTAGES

Interviewer	% errors in questions with difficulties	% errors in questions without difficulties	Difference
1	53.3	18.0	+35.3
2	33.3	28.3	+ 5.0
3	33.3	25.0	+ 8.3
4	33.3	35.0	− 1.7
5	14.3	20.0	− 5.7
6	71.4	53.3	+18.1
7	25.0	13.2	+11.8
8	53.3	37.9	+15.4
9	55.5	30.1	+25.4
10	100.0	59.1	+40.9
11	85.7	20.0	+65.7
12	44.4	29.4	+15.0
13	47.2	55.5	− 8.3
14	30.0	19.6	+10.4
15	76.2	30.0	+46.2
16	44.4	40.7	+ 3.6
17	62.5	23.3	+39.2
18	33.3	33.3	0.—
19	62.5	33.3	+29.2
20	99.9	6.2	+93.7
21	29.1	21.0	+ 8.1
22	29.6	51.8	−22.2
23	51.8	27.7	+24.1
24	29.3	21.2	+ 8.1

The respondent noted down the errors made, without using the tape recording. Only in minor points divergences appear between the tape and the report of the respondent.

Testing of Hypothesis 1

We have three groups of indicators for the difficulties in the situation felt by the interviewer: difficulties applying to all three interviews (spontaneous dislike of publicity research, dislike of housewives and/or well-to-do people as respondents, an unfavourable opinion of the questionnaire as a whole); difficulties in the atmosphere of one particular interview; and objections to the phraseology or the contents of particular questions from the questionnaire. As to the first two categories of difficulties there appears to be no relation with the frequency of cheating.[11] There does, however, appear to exist a connection between the degree of cheating and the difficulties per question.

In Table 4 a comparison has been made between the percentages of errors in those questions which the interviewer for some reason or other found difficult, and the percentage of errors in the questions he did not consider difficult.

In the case of four interviewers the latter percentage is higher, and in one case the percentages are equal; in all other cases the percentage of errors in (subjectively) difficult questions is higher than in the ordinary questions. We think the conclusion is justified that the interviewer's opinion of a question influences the degree of cheating to which he is inclined.

If he has confidence in a question he puts it literally, but if he thinks the question pointless or wrong, he is inclined to cheat. Considering the whole, we cannot confirm hypothesis 1 concerning the relation between the difficulties felt by the interviewer and scamping instructions.

The only relation existing is with the level of the difficulties per question; feelings of dislike for the kind of intirview or feelings of antipathy regarding one particular respondent do not lead to a higher degree of scaping.

Testing of Hypothesis 2

In open questions the percentage of errors is 34 $^o/_o$, in closed questions 37$^o/_o$.

Therefore we cannot accept hypothesis 2.

All the same Hyman has concluded that open questions (in general: a less structured interview situation) lead to a situation more favourable for the concurrence of the interviewereffect.

Combining the two arguments leads to the supposition that the errors in open questions occur mainly in the rendering of the answers.

Testing of Hypothesis 3

In the questionnaire for the interviewers a question was included about the motives for doing interviewing work. It was asked to arrange the following motives in their order of importance:

— to get out of the rute of daily life
— to have an income of one's own
— because it is pleasant to see and speak with a lot of people

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[11] In connection with the length of this paper, many tables have been omitted. Testing has been carried out with the I-test of Spitz. Of course the tables and the questionnaires used are available to those interested in them.

— because it is a kind of work where you can choose your own working hours
— because you have an independent job
— for the money, but the work is rather pleasant, too
— because it is interesting to work with varying subjects.

For the whole group the argument holds good that the financial motive weighs very heavily, and particularly in the form "for the money, but the work is rather pleasant, too". On comparing the students with the housewives, the financial motive appears to weigh more heavily for the students than for the housewives; although money also takes first place with the housewives, it is immediately followed by the motive of social contacts.

The supposition of hypothesis 3 was tested by adding up the rank numbers given to the two financial motives. There appears to exist a weak relation between an orientation to money and scamping. We would not be justified to consider hypothesis 3 as confirmed on the basis of one weak relation, but we may consider it probable. The numbers in this survey are too small to subject this result to a probability test, in connection with the difference in attitude of students and housewives. There appears to be no relation, however, between students/housewives and the number of errors made.

TABLE 5. RELATION BETWEEN EARNINGS-ORIENTED ATTITUDE
AND NUMBER OF ERRORS PER INTERVIEWER

Sum of rank numbers of motives d and f	3—7	8—13	Total
Number of errors ≤20	1	4	5
21—25	2	1	3
26—30	4	2	6
31—35	5	—	5
≥36	4	1	5
Total	16	8	24

$1 = 9.0874$
$10 < p < 20$

Further results

There are a number of factors left in the material which may have some bearing on the degree of scamping. However, there appears to exist no relation between the degree of scamping and:

— sex, age and education. Neither do young female interviewers have a better contact with the respondents (cf. B e n n e y et al., 1956, and E h r l i c h, 1961)
— interview experience
— a negative evaluation of the situation during the interview by the respondent.

There may be some relation between the degree in which the questions are personal and the degree of scamping in the question. In this interview, however, there were only two personal questions (namely, about income and bad breath). In both questions many errors were made.

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THE TECHNIQUE OF THE "INVERSE QUESTIONNAIRE"
IN THE CONTENT ANALYSIS OF VERBAL DOCUMENTS

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The task of analysing specific sets of relatively homogeneous verbal documents (e. g. certain newspaper articles, meeting records, resolutions, etc.) represents a frequent problem of sociological research. The sense of such analyses is to valuate the content information of the separate documents so as to yield a global, clearly arranged information which as a rule serves as a subject matter of further scientific investigation or forms the basis of a certain kind of social decision.

The so-called technique of the inverse questionnaire helps to solve exactly this sort of problems. It may be included in the system of the content-analysis techniques which should supply an objective, systematic and quantitative description of the evident content (see B. Berelson, Content Analysis in Communication Research, 1951). Its fundamental idea is simple. The traditional sociological research technique of the questionnaire inquiry is based on the fact that a set of questions determined a priori by the researcher is answered by a sample of respondents. These answers then represent certain verbal documents which are further elaborated by logical or statistical instruments. Thus the given set of verbal documents (answers) is a priori influenced by the design of the researcher who has worked out the questionnaire.

In the case of the inverse-questionnaire technique, we proceed in the exactly opposite way: for we take for granted that a certain a priori given set of verbal documents represents a set of answers to a certain questionnaire. The elaboration of this questionnaire (the so-called "inverse questionnaire") and the processing of the verbal documents as answers to this questionnaire represent the basic phases of the inverse-questionnaire technique.

Let us now present a more precise formulation of the problem outlined provisionally for the purpose of illustration. We consider a communication expressed by means of words to be a verbal document. In referring to relatively homogeneous verbal documents, we mean that they possess a certain common "identification trait" (e. g. they are leading articles of newspapers or reports from meetings, etc.).

For briefness sake, let us designate as V the set under examination (the complex of verbal documents), and its general element (the verbal document) as v. Let us denote by $u(v)$ the universe of the verbal document $v \in V$ (i. e. the segment of reality expressed by the verbal document v). Quite naturally we assume that every $u(v)$

forms a part of a certain universe (reality) U, in other words, for each $v \in V$ it holds true that $u(v) c U$, symbolically $v \in V => u(v) c U$. If, in carrying out the content analysis of verbal documents, we also submit to investigation their universe, we are operating at the so-called pragmatic level (see e. g. L. Tondl, Problémy sémantiky (Problems of Semantics), 1960). If we abstract from the universe while not reducing the analysis of verbal documents only to the study of the language forms of the given verbal documents, we are operating at the semantic level (see again L. Tondl: Problémy sémantiky (Problems of Semantics)).

By the content predicate o on the set V we denote every predicate relating to at least one verbal document $v \in V$, for which ov represents a statement, i. e. it is a proposition the statement on the validity or invalidity of which has sense.

Let us express the set of content predicates on V by OV. As a rule in accordance with the propositional calculus we further introduce the so-called veracity function p of the content predicate, so that $p(ov)=1$, if ov is true, $p(ov)=0$, if ov is false.

We conceive the set of all those $o \in O(V)$, for which ov represents a statement, as the content range of the verbal document $v \in V$. We denote this content range by $Cov(V)$ (in an abbreviated form, $c(v)$).

It is evident that $c(v) \neq \emptyset$ holds good for each $v \in V$. The set $r(v)=O(V)-c(v)$ is called the residue of the content range of the verbal document $v \in V$ with resprect to $O(V)$. In case that $c(v)=O(V)$, or $r(v)=\emptyset$, we say the verbal document v is, as regards range, complete with respect to $O(V)$. The set of all $o \in O(V)$, where ov represents a statement for each $v \in V$, is called the common content range V with respect to OV, and designated as C.

Obviously the following holds: $C = \widehat{v \in V}\, c(v)$.

The set $O(V)=C$ expresses the content heterogeneity of the system of verbal documents V as regard $O(V)$. The maximum common content range V with respect to $O(V)$, in other words, the validity of $O(V)=C$, or $c(v)=O(V)$ for each $v \in V$, would certainly represent the required state.

In a certain sense this state may be attained by the modification of the system of content predicates to V:

If $o \in O(V)$, then, exactly the following cases may arise for each $v \in V$:

1. ov is a true statement,
2. ov is a false statement,
3. ov is no statement at all.

Instead of one content predicate o, we introduce the triad o', o'', o''', of so-called "metapredicates," to V in the following way:

$o'v$ means the statement that "the statement ov is a true statement",

$o''v$ means the statement that "the statement ov is a false statement",

$o'''v$ means the statement that "the statement ov is no statement at all".

It is evident that $o'v$, $o''v$, $o'''v$ are statements for each $v \in V$ mutually interdependent with regard to their veracity, for

$$(p(o'v)=1) v (p(o''v)=1) < => (p(o'''v)=0),$$
$$(p(o'v)=1 < => (p(o''v)=0).$$

Thus it is possible to pass over (not in the only way that is possible) from the set of the content predicates $O(V)$ to the set of metapredicates $O^1,(V)$ which give the same information concerning the set of verbal documents V but have the following important quality:

$$c_{o'(v)}{}^{(v)} = O(V) \qquad \text{or equivalently — if we denote}$$

$$C' = \widehat{v \in V} \, c_{o'}(v)^{(v)} \quad \text{or}$$

$$C' = O(V) \qquad \text{or}$$

the system of verbal documents V on the maximum common content range (the minimum, i. e. zero content heterogeneity with regard to $O'(V)$).

If we quite naturally assume that both the set of verbal documents and the set of content predicates — or the set of content metapredicates — are final sets, then it is possible to introduce the concept of the content matrix of the system of verbal documents V with respect to $O'(V)$.

Let us designate $V = \{v_1, v_., \qquad ... v_r\}$,
$$O'(V) = \{o_1, o_, \qquad ... o_s\}.$$

The content matrix of the system with respect to is called matrix $A_{o'(v)}(V)$:

$$\begin{pmatrix} p(o_1v_1), & p(_2ov_1), & ..., p(o_sv_1) \\ p(o_1v_2), & p(o_2v_2), & ..., p(o_sv_2) \\ \vdots & & \vdots \\ p(o_1v_r), & p(o_2v_r), & ..., p(a_sv_r) \end{pmatrix}$$

In concluding this introduction, it would be adequate to denote the level of the content analysis to which this approach to the research of verbal documents belongs. On principle, it is necessary to state that this is entirely determined by the choice of content predicates, for these are capable of expressing the relation of the document V to its respective universe $u(v)$: then we move at the pragmatical level of analysis (indubitably, however, this method requires an objective knowledge of the universe $u(v)$, so that we might make responsible statements concerning the validity or invalidity of the content predicates or metapredicates), or we abstract from the universe $u(v)$, while not limiting the content predicates only to the formal aspect of the language used in the verbal documents (i. e. to the systematical level of analysis), and operate at the semantic level of the content analysis. The level of the content analysis carried out by means of this method is, therefore, optimal.

Now we are going to analyse the special technique of the content analysis by the method of the inverse questionnaire. This consists of several phases.

1. The Phase of Expert Reading

Let us assume a given relatively extensive set of relatively homogeneous verbal documents V. From this set, the subset $\widetilde{V}$ is gained by random selection. The phase of expert reading is based on creating the respective system of content predicates on the subset $u\widetilde{V}$.

The system of predicates obtained in this way is denoted as $O'(\widetilde{V})$ and called $\widetilde{V}$ — the inverse questionnaire on V. Conceivably we assume, analogically to the above-mentioned explanation, that $v \in \widetilde{V}^{c(v)} = O'(\widetilde{V})$, in other words:
the subset of verbal documents $\widetilde{V}$ has a maximum common content range with regard to $O'(\widetilde{V})$.

Moreover, it can be easily demonstrated that $\widehat{v \in \widetilde{V}^{c(v)}} = O'(V)$; this, of course, is not determined by the content of the set V, but by the character of the system of predicates $O'(\widetilde{V})$.

Quite different is the question of the way in which the set of predicates $O'(\widetilde{V})$ will differ from the set of predicates $O'(V)$.

The following obviously holds good: $O'(\widetilde{V}) \subset O'(V)$ and, as a matter of course, $\widetilde{v \in V^{C(v)}} = O(V)$ (again with respect to the construction of the set $O(V)$).

The difference $O'(V) - O'(\widetilde{V}) = q(\widetilde{V})$ depends on the range of the selection $\widetilde{V}$, or on the content homogeneity of the set of verbal documents.

If we agree that the symbol $q(\widetilde{V})$ means the power of the set $q(\widetilde{V})$, then the symbol

$$x(|q(\widetilde{V})| \leq u)$$

means the probability of the fact that the power of the set $q(\widetilde{V})$ will be less than or equal to u (the whole non-negative number, less than or equal to $|O'(V)|$). The claim laid on the random selection of the set $\widetilde{V}$ can be formulated in the following way: Let ϵau be given. The selection should yield the following result:

$$x(|q(\widetilde{V})| \leq u) \geq 1 - \varepsilon$$

It is obvious that the question of the concrete creation $\widetilde{V}$ of the inverse questionnaire presents a relevant problem. It can easily be understood that here the content analysis is considerably marked by the subjective design of the researcher, who, according to the aims of their investigation, formulate the respective elements of the $\widetilde{V}$ — inverse questionnaire on V. A reliable instrument applied for the purposes of objectifying the expert classification phase is the principle that every member of the team engaged in expert reading works independently on the others (if this, of course, is physically realizable; then the respective $\widetilde{V}$ — inverse questionnaires with respect to V are compared. The theoretically ideal state implies such a set of $O'(\widetilde{V})$ which might be designated as exhausting from the viewpoint of content. It involves such a set of predicates $O'(\widetilde{V})$ which, on the basis of the statements ov, where $v \in \widetilde{V}$, it is possible to decide about an arbitrary proposition $óv$, where $v \in \widetilde{V}$ and $ö O'(\widetilde{V})$, whether it is a true or a false statement or whether it is no statement at all. The same applies to $O'(V)$. In the following, we shall presume that $O'(\widetilde{V})$ or $O'(V)$ are in the above-mentioned sense, exhausting from the viewpoint of content.

2. The Phase of the So-called Respondent Reading

The starting-point of the phase of respondent reading is the $\widetilde{V}$ — inverse qestionnaire as regards V (exhausting from the viewpoint of content), having the maximum common content range with respect to this questionnaire.

The respondent-reading phase consists in the application of the $\widetilde{V}$ — inverse questionnaire to the whole set V, whereby we gain the so-called content-matrix A. As regards the $\widetilde{V}$ — inverse questionnaire denoted as $A_{o'(\widetilde{v})}(V)$, the formation of which follows from what has already been said.

In the phase of respondent reading, it is important to call attention to two facts. The first is the following: in the respondent rading, owing to the dichotomy of the elements of the $\widetilde{V}$ — inverse questionnaire as regards V, the subjective factor introduced into the phase of respondent reading by the members of the team engaged in it is minimalized.

The second fact concerns the difference $O'(V) - O'(\widetilde{V})$, or the value of $x(|q(V)| \leqslant u)$; where u and ϵ are given.

As a rule, this problem is simplified by formulating it in the following way: $o \leqslant \varrho = 1$ is given in advance, while

$$S(\widetilde{V},\ V) = \frac{|o'\ (\widetilde{v})|}{|o(v)\ |} \geqslant 1 - \varrho \text{ is required.}$$

In the phase of respondent reading, we also ascertain those content predicates which belong to the difference $O'(V) - O'(\widetilde{V})$. If $S(\widetilde{V},V) \geq 1 - \varrho$ holds in the case of the relative frequency $S(\widetilde{V},V)$, we respect the admissible interval of inaccuracy. If, however, the previous relation does not hold good, it is necessary to enlarge the $\widetilde{V}$ — inverse questionnaire with respect to V, i. e. to enlarge the set $\widetilde{V}$.

Also in the respondent reading the objectivization of the findings obtained may be realized by the rotation of the results arrived at by the individual members of the team.

3. The Phase of the So-called Exact Elaboration of the Content Matrix A

The matrix $A_{o'(\widetilde{v})}(V)$ is a mathematical subject, in which the content of the set of verbal documents V is encoded — transformed. From the formal viewpoint, $A_{o'(\widetilde{v})}(V)$ represents an organized scheme of the symbols 0 and 1 which may be processed in several ways. The matrix $A_{o'(\widetilde{v})}(V)$ itself, however, presents an aggregated information on the content V in a clearly arranged form which it is disproportionally easier to grasp physically than in the form of verbal documents.

The elementary method of elaborating the matrix $A_{o'(\widetilde{v})}(V)$ is the ascertainment of the frequencies of valid or invalid statement, i. e. of the symbols and the lines and columns of the given matrix.

In a number of cases already this elementary action provides the information sufficient for certain purposes.

A disproportionately more fertile logico-statistical procedure in the exact elaboration of the content matrix $A_{o'(\widetilde{v})}(V)$ is the method GUHA, i. e. automatic general unary hypothesis machine (see Hájek, Havel Chytil: GUHA — Method of an Automatic Search for Hypotheses, Cybernetics 1, 1966).

We are not concerned here with getting acquainted with this method which has already been verified on a number of other problems. What is essential is the fact that, by means of this method, all the valid unary hypotheses can be obtained on the given set of documents by means of a computer.

However, in applying this method, it is suitable to relize that the matrix $A_{o'(\widetilde{v})}(V)$ a priori contains dependences among its elements which are given by the construction of the $\widetilde{V}$ — inverse questionnaire (see above), and thus eliminate beforehand the known, valid unary hypotheses.

In the exact elaboration of the content matrix $A_{o'(\widetilde{v})}(V)$ it is also possible to apply the latent-structure analysis, i. e. to ascertain the so-called latent structures of the given verbal documents or of the selected content categories, which we assume to be unambiguously quantified (see P. F. Lazarsfeld — N. W. Henry, Latent Structure Analysis, New York, 1968).

PREDICTION IN CRIMINOLOGY

C. I. DESSAUR
THE NETHERLANDS

> We can't simply let you keep walking
> in open insubordination without punishing
> you.
>
> (Joseph Heller, Catch-22, New
> York, 1955, p. 434)

I. DEFINITION OF THE SUBJECT-MATTER

Before describing, discussing and proposing mathematical models and meth-
ods of prediction in criminology, it is necessary to give a definition of crimi-
nology and of prediction.

I.1. Criminology: fundamental and applied

In European criminology, with the exception of some Scandinavian research,
a sufficient distinction between criminology as an applied and as a fundamental
science has hardly ever been made. Criminology as an applied science is bound
to the current ideology and feelings about the problem of crime, criminals and
their victims and serves as a tool for the decision policy of the magistrates in power.
Criminology as a fundamental science analyses the interaction processes between
the society, a given penal law system (and penal policy) and the behavior defin-
ed as criminal. A global picture of the relation between macrostructure, penal
system and behaviour defined as criminal, would look something like Fig.1.

$$
\begin{array}{ccc}
\text{penal} & & \text{system} \\
\uparrow\downarrow & & \uparrow\downarrow \\
\text{macro-structure} & \begin{array}{c}\leftarrow\\\rightarrow\end{array} & \begin{array}{l}\text{behavior defined}\\\text{as criminal}\end{array}
\end{array}
$$
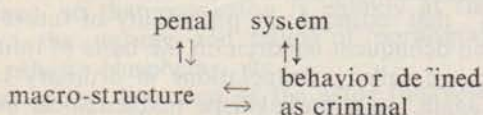
I.2. Prediction: statistical and theoretical

Prediction is a many-valued term, but here we are concerned with scien-
tific predictions only. That is predictions which are clear, unambiguous falsifiable
(or rejectable) in principle. It is necessary, however, to distinguish the characte-

ristics of theoretical predictions from model-based predictions and to decide where statistical predictions stand.

Most scientists will agree that model-based prediction is prediction on the basis of an assumed isomorphism between model and empirical data. In contrast to unscientific predictions the model predictions can be rejected (for pragmatical reasons), although not strictly falsified. They will also agree that theoretical predictions (based on a set of well tested hypotheses) must he falsifiable in principle, even though in practice this will rarely occur, because of the level of abstraction of real theories.

But what about inferential statistics? Statistical predictions are most certainly based on a mathematical system, interpreted as a (probabilistic) mathematical model. The statistical model itself is rejectable, under circumstances, though not falsfiable in the way a well proven theory is. However, the predictions made for empirical data with the help of the statistical model are themselves perfectly falsifiable in principle, quite like theoretical predictions. The dilemma we are confronted with is whether inferential statistics is a theory of sorts in its own right, or just another model on which predictions can be based. In the latter case, what is the practical use of such predictions? We know that in principle almost any internally consistent model will do to make predictions. When inferential statistics, however, is supposed to be a theory in its own right, the methodological question arises: how was the statistical "theory" arrived at?

I am well aware that the dilemma indicated above is dependent upon the way in which one defines models, theories, and the concept of prediction. I shall seek the solution of the dilemma posed in an operational way, as becomes the researcher in a not so fundamental branch of sociology.

1.3. Two types of statistical prediction

Statistical "prediction" in applied criminology is easily divided into two main categories.

A. "Predictions" which classify an individual event e in the category of events for which a certain regression equation is known to contain the set of outcomes. If the regression curve has been constructed by procedures that are agreed upon to be right, it is itself rejectable under circumstances (for pragmatical reasons) but not falsifiable (highly improbable outcomes are incalculated in its probabilistic set of primitive propositions). The regression equation "predicts" like any model does. The (falsifiable) theoretical hypothesis is the one that classifies e.

B. "Predictions" that estimate the probability of future delinquency in a population of as yet non-delinquent children on the basis of information derived from a delinquent sample are called extrapolations in ordinary language. The estimation itself is based, again, on a probabilistic mathematical model. The (falsifiable) theoretical proposition in this case is that the boundary conditions for the estimation to be valid, have not been trespassed in a given case.

The conclusion so far is that the two main techniques used in statistical prediction as applied in criminology are in themselves modelbased (not falsifiable, though rejectable) but that some low-level theoretical propositions are involved. A. when deciding to what population an element belongs; B. which boundary conditions should be regarded when extrapolating.

II. THE CAUSES OF CRIME

II. 1. The causal model in criminology

In well-developed sciences like physics theories are nearly always formulated in mathematical language, that is their propositions are due to mathematical models, though not to the statistical one. The moment has come it seems to me, in which preferably mathematical models in fundamental criminology are needed, and a way must be indicated for arriving at the level of theory-formation in the fundamental branch again, in order to be able to produce essentially better predictions, in the applied branch.

We now come to the core of this paper: the mathematical representation of the interaction processes between a macrosocial structure (a political community), its penal system (penal law + penal policy in the widest sense) and the (deviant) behavior defined as criminal.

I think it should be noted that the concepts of "cause" and "effect" themselves form part of a causal *model* which is typical for both ordinary language and low level theories. It is possible to distinguish between functions with and without an inverse as models for social interaction, without using the concept of "cause" at all. It is only because of the still smouldering etiological school in criminology (with adepts especially among those who are prediction-oriented) that I shall call, methaphorically, a political system the "cause" of its penal system, a penal system the "cause" of criminality, since there is no crime in the technical sense without a (variable) legal definition of it. To represent the qualitative relationship between the social macro-structure of a given political community, its penal system and the selection of behavior to be defined as criminal, I think a model derived from graph-theory might be useful.

II. 2. Basic model for "causal" classification

From experience we know that the social acts which are defined as criminal are exhaustively classified by the following four categories:

1) Behavior at the discretion of the actor, for which objective empirical indicators are present. (E. g.: crossing the street within two meters from the corner is defined as criminal.)

2) Behavior at the discretion of the actor, for which no objective empirical indicators are defined, so that conviction is entirely at the subjective discretion of the judges. (E. g.: the writing and selling of 'pornographic' books; insulting religious beliefs of others; blasphemy, etc.).

3) Behavior not at the discretion of the actor (unavoidable or 'unfree' behavior) for which objective empirical indicators are present. (E. g.: compulsive exhibitionism (3a) or behavior which is unavoidable for external reasons (3b).)

4) Behavior not at the discretion of the actor, for which no objective empirical indicators are defined. (E. g.: a supposed act of insulting or such, during a state of lowered consciousness in an epileptic.) Schematically:

Fig. 2

		f	$\bar{f}$
indicators	obj.	1	3_b^a
	subj.	2	4

$f=$'free' act
$\bar{f}=$'unfree' act

II.3. Graph and difference equation for "causation" of crime by penal selection

If sociology of penal law existed, and jurimetric methods were fully develop-ed, the changes in penal policy and the changes in behavior defined as criminal could be studied with the help of a model for non-continuous, discrete functions for which sets of difference equations could be applied. One could start from a simple graph where pressure group, penal system and behavior defined as criminal might be indicated as follows (Fig. 3).

Fig. 3
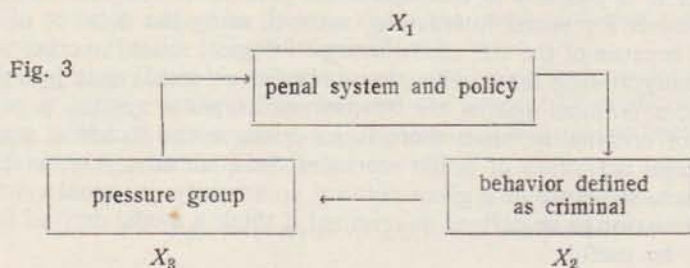
For the sake of simplicity we shall not only consider the penal system as depend-ent on the pressure group and the behavior defined as criminal as dependent on the penal system but also the influence of pressure groups as dependent on this final selection of criminal behavior. This is of course an extremely simplified mo-del. Now if we denote the penal system at time t as X_{1t}, the behavior defined as criminal at time as t as X_{2t}, and the power of the combined pressure groups at time t and at time $t-1$ as X_{3t} and X_{3t-1}, we get:

$$X_{1t}=a_1+b_{13}X_{3,t-1}+u_{1t} \tag{3.1}$$
$$X_{2t}=a_2+b_{21}X_{1t}+u_{2t} \tag{3.2}$$
$$X_{3t}=a_3+b_{32}X_{2t}+u_{3t}, \tag{3.3}$$

where u is an error-term, allowing for neglected exogeneous variables. We see from the equations that the penal system at time t is dependent on the power of pres-sure groups at time $t-1$.

By substituting equation (2) into equation (3) we get:

$$X_{3t}=a_3+b_{32}(a_2+b_{21}X_{1t}+u_{2t})+u_{3t}$$
$$=(a_3+b_{32}a_2)+b_{32}b_{23}X_{1t}+(b_{32}u_{2t}+U_{3t}). \tag{3.4}$$

By substituting $t-1$ for t in equation (4) we get:

$$X_{3, t-1}=(a_3+b_{32}a_2)+b_{32}b_{21}X_{1, t-1}+(b_{32}u_{2, t-1}+u_{3, t-1}).$$ (3.5)

And by substituting this equation into (1) we get:

$$X_{1t}=a_1+b_{13}\left[(a_3+b_{32}a_2)+b_{32}b_{21}X_{1, t-1}+(b_{32}u_{2, t-1}+u_{3, t-1})\right]+u_{1t}$$

$$=(a_1b_{13}a_3+b_{13}b_{32}a_2)+b_{13}b_{32}b_{21}X_{1, t-1}+(b_{13}b_3.u_{2, t-1}+b_{13}u_{3, t-1}+u_t),$$ (3.6)

which we may write as:

$$X_{1t}=A_1+b_{13}b_{32}b_{21}X_{1, t-1}+(U_{1t}+U_{2, t-1}+U_{3, t-1}).$$ (3.6)

Thus in equation (6) we have expressed X_{1t} (the penal system) as a function of the penal system at time $t-1$, while a combined error-term for neglected variables is added.

Graphically we have a *loop*: a change in the penal system will eventually influence a future change in this system (a similar procedure might have been applied to penal policy), that is, a difference equation has been produced, for which the coefficient of $X_{1, t-1}$ has to be interpreted (a rather complicated practical problem which will not be considered in this context).

Once the penal system and the behavior defined as criminal are described mathematically, we have a fundamental predictions model, to which can be added the boundary conditions (or individual "causes" in traditional language) for which this selection works.

That is to say: for acts in cell I (see II.2) of our classification model, equation (6) will do, and the individual variable that have been neglected will go into U_l. For acts in cell 3 (a and b) the external or internal "unavoidability" will have to be accounted for either by U_i, or preferably by additional mathematical procedures. Of course cell I and cell II stand actually on both ends of a continuum. For acts in cell 2 and 4 the variables that lead eventually to the (subjective) interpretation of a certain act as belonging or not to the negative category of a given penal norm, should be accounted for by additional mathematical procedures.

II.4. Predictive models for crimes with subjective indicators

Selecting deviant acts which will be defined as criminal (the penal system) and deciding (e. g. in court) whether an only subjectively indictable act does belong to the set of behavior defined as criminal are of course two different processes. In the former case the time-lag made us choose a difference equation model. In the latter case the decision to interpret subjectively, for example whether or not certain publication will be defined as belonging to the pornographic category, is probably best seen as an optimalization problem. Judges (or magistrates in general) are confronted with two kinds of suspects: those with and those without a socio-economic and cultural status comparable to (or sympathetic to) that of the magistrates themselves. Further, they can choose either of two alternatives when confronted with an act which may or may not be subjectively classified as belonging to the category defined as criminal.

Lastly, they will not want to seem prejudiced, neither in their own opinion nor in that of the public (this goes especially for a democratic society; in an extremist kind of state prejudice may be honored under circumstances), so that they

will be psychologically inclined to introduce a random element into their inter-
pretation of acts for which no measurable or objectively observable indicators
are defined.

As a result, if all of these evidently time-continuous processes were linear,
we should have three linear regression equations, and the optimization would
be easily predictable. In reality, some or all three of these processes may be best
described as differential equations, and their interpretation may be difficult.

If magistrates showed no tendency to counterweight the predictability of their
decisions by introducing a random element, we could easily predict that if X_1 = emo-
tional sympathy (on the basis of again subjectively interpreted indicators), X_2 = deci-
sion to convict or not (primarily dependent on the result of the former decision,
though also on exogeneous variables), but X_1 among others dependent on former
decisions about X_2 (once convicted, one gets more easily convicted again) we have a
simple, semi-stable feedback-system, where only the randomization, incalculated
in the error-terms for X_i, and other exogeneous variables allow for dynamic
processes.

We could represent this system graphically as

Fig. 4

$$X_1 \quad \overset{\pm}{\underset{\mp}{\overset{\longrightarrow}{\longleftarrow}}} \quad X_2$$

If the decision for X_1 is positive, we will have a negative decision for X_2 and
vice versa.

Algebraically we would have two equations:

$$\frac{dX_1}{dt} = b_{11}X_1 + b_{12}X_2 \tag{4.1}$$

$$\frac{dX_2}{dt} = b_{21}X_1 + b_{22}X_2, \tag{4.2}$$

where b_{11} and b_{22}, or generally b_{ii}, are the feedback terms, and b_{12} and b_{21}, or gene-
rally b_{ij}, represent the influence of the variables on each other.

We have but a qualitative indication of the situation so far, which, however,
might be substantiated by quantitative measurements. Already we know, on empi-
rical grounds, that the optimal decision for judges will imply randomization,
which by differentiating with respect to t has been lost from sight here.

We could allow for this randomization effect by implying that feedback from
X_1 to X_1 will eventually become negative, and so will feedback from X_2 to X_2.

II.5. Predictive models for unavoidable crimes

There is left for discussion the prediction of those crimes that are inevitable, either for reasons internal to the actor (e. g. compulsive acts) or for reasons external to him (the shortage of legal parking places can be taken as an example).

In the latter case, from the viewpoint of macro-prediction, we are confronted with a mathematically extremely simple, empirically probably very hard to quantify, subtraction. From the individual viewpoint with a probability function. In the former case the estimation techniques used up to now in prediction in applied criminology will be the right approach.

We take the behavior of a known delinquent for this type of criminality as our sample, and draw inferences about his future behavior in this field 'all other things being equal', or implying the same boundary conditions.

III. Conclusions

The integration (not in the technical sense) of the four mathematical approaches in II 3/4/5 should be our final aim. One should seek, however, the contribution of the above text to prediction in criminology not in the rough application of existing mathematical approaches to criminological situations, but in the attemps to shift the attention of empirical researchers from (fruitless) individual prediction that is based on current ideologies concerning the criminal as an exceptional human being towards more critical (fundamental) research.

UNE MÉTHODE DE MESURE DE LA STRUCTURE SOCIOLOGIQUE DE LA SOCIÉTÉ

JIVKO OCHAVKOV
BULGARIE

1

Le pronostic scientifique de la société humaine concrète en tant que système total, l'élaboration et surtout la réalisation d'un plan social correspondant ne deviennent possibles en principe et nécessaires objectivement qu'en présence d'une condition fondamentale — la collectivisation de tous les moyens de production. Cette condition fondamentale se crée dans la société humaine concrète de type socialiste après l'accomplissement du passage du capitalisme au socialisme. Dans la République Populaire de Bulgarie le passage du pronostic et de la planification de l'économie et des autres processus sociaux distincts au pronostic et à la planification de la société en tant que système total a commencé en 1968.[1]

Pour l'élaboration des pronostics et des plans de la société en tant que système total, il s'avère nécessaire de recueillir et d'analyser une information scientifique concrète sur la structure sociologique de la société, avant tout — sur sa structure sociologique fondamentale déployée. Les parties intégrantes de cette structure sont les domaines principaux de la vie sociale, notamment: les forces productives, les rapports de production, la politique, le droit, la science, la morale, l'art, la religion, le mode de vie, la santé publique, la culture physique, l'instruction, l'autodidactie, la langue, la presse et les autres moyens de communication. Chacun de ces domaines principaux de la vie sociale a sa structure spécifique. Pour l'étude concrète de la structure sociologique fondamentale déployée, il est indispensable de recueillir de l'information non pas sur toutes mais seulement sur les parties intégrantes les plus essentielles de la structure spécifique de chaque domaine principal distinct de la vie sociale; il s'agit de ces parties intégrantes, dont l'étude apportera une information suffisante sur l'état global du domaine principal respectif de la vie sociale.[2]

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[1] Voir Todor Jivkov, Orientations fondamentales du développement ultérieur du système de gestion de notre société, Sofia, Édition du Parti communiste bulgare, 1968.

[2] Sur les questions de la différence entre la prévision sociale et le pronostic social, de la structure sociologique de la société fondamentale (déployée et non-déployée) et régionnale, réelle et accumulée par les membres de la société, de la structure spécifique du domaine principal distinct de la vie sociale, de l'aspect sociologique du pronostic social, etc. Voir Jivko Ochavkov,

Mais on sait que les caractères, suivant lesquels l'information sociologique concrète est recueillie, dans leur plus grande partie ne sont pas qualifiés eux-mêmes, ou en d'autres termes, sont de nature qualitative. A ce propos des sociologues et des mathématiciens font des efforts depuis longtemps pour trouver les meilleurs moyens de transformation des caractères qualitatifs en caractères quantitatifs; jusqu'à présent on n'a proposé qu'une suite de méthodes destinées à élaborer différentes sortes d'échelles. Les méthodes d'élaboration d'échelles nominales et surtout d'échelles ordonnées représentent sans doute une réussite scientifique.

Mais pour l'élaboration des pronostics et des plans de la société en tant que système total les méthodes de transformation des caractères qualitatifs en caractères quantitatifs se révèlent insuffisantes. Il est nécessaire encore de trouver des méthodes convenables à la quantification de chaque domaine principal de la vie sociale considéré dans sa totalité.

Le présent rapport est consacré à la description mathématique d'une telle méthode. Il s'agit plus exactement d'une méthode d'élaboration d'une échelle combinatoire pour chacune des parties intégrantes de la structure sociologique fondamentale déployée, ayant pour point de départ les échelles ordonnées correspondantes.

Cette méthode a été tout d'abord appliquée lors de l'analyse d'une partie représentative des données de l'étude sociologique concrète de la religion en Bulgarie effectuée au cours de l'automne 1962. La même méthode est appliquée actuellement lors de l'analyse des données de l'étude sociologique de la ville et du village en Bulgarie effectuée au cours de la période décembre — avril 1967—1968; cette étude a embrassé presque toutes les parties intégrantes de la structure sociologique fondamentale déployée de notre société.

*

L'élaboration d'une échelle combinatoire pour la totalité d'une partie intégrante donnée de la structure sociologique fondamentale déployée de la société d'après la méthode proposée, s'effectue de la manière suivante:

a) parmi toutes les échelles ordonnées se rapportant à la partie intégrante donnée, on choisit celles, qui, à un degré suffisant, expriment son essence;

b) les subdivisions de toutes les échelles ordonnées se rangent suivant leur signification dans une direction unique — par exemple en sens décroissant;

c) les échelles ordonnées elles-mêmes se rangent sur la même direction;

d) toutes les subdivisions de toutes les échelles ordonnées se rapportant à la partie intégrante donnée et rangée de la façon indiquée sont combinées mathématiquement entre elles dans un ordre successif défini;

e) dans le cas où quelques-unes ou toutes les échelles ordonnées ont des subdivisions non seulement de valeur positive mais de valeur positive et négative, la combinaison des subdivisions de valeur positive est effectuée tout d'abord et ensuite sont incluses dans la combinaison selon un ordre successif défini des subdivisions de valeur négative.

La sociologie et le pronostic social, dans les Actes du Septième congrès mondial de Sociologie, vol. I, Sofia, 1970.

Le choix des échelles ordonnées, leur rangement, ainsi que le rangement des subdivisions de chaque échelle ordonnée, selon le procédé indiqué plus haut, s'effectuent uniquement suivant leur importance pour la partie intégrante donnée. Ceci dit, le nombre des échelles ordonnées pour les différentes parties intégrantes de la structure sociologique fondamentale déployée ainsi que le nombre des subdivisions des échelles ordonnées peut être différent.

Le rangement des échelles ordonnées se rapportant à une partie intégrante donnée de la structure sociologique, et des subdivisions de ces échelles ordonnées dans l'ordre décroissant peut être présenté de la manière suivante:

Q_1	Q_2	Q_{n-1}	Q_n
1	1	1	1
2	2	2	2
.	.	.	.
.	.	.	.
.	.	.	.
p_1	p_2	p_{n-1}	p_n

Chaque combinaison des subdivisions de toutes les échelles ordonnées peut être exprimée par $(k_1, k_2 . . .,k_{n-1}, k_n)$, k_1 marquant n'importe quelle subdivision de Q_1, k_2 — n'importe quelle subdivision de Q_2, etc.

Etant donné que les échelles ordonnées et leurs subdivisions sont rangées dans l'ordre décroissant, toutes les combinaisons $(k_1 . . . .,k_n)$ pour la partie intégrante donnée sont rangées dans le même ordre. La combinaison des premières subdivisions de tous les Q, c'est-à-dire $(k_1=1, k_2=1,...., k_{n-1}=1.k_n=1)$ vient en tête; ensuite viennent la combinaison formée par les premières subdivisions de Q_1, Q_2, . . ., Q_{n-1} et la deuxième subdivision de Q_n, c.-à-d. $(k_1=1, k_2=1,. . ., k_{n-1}=1, k_n=2)$.

Le nombre de toutes les combinaisons $(k_1,. . .,k_n)$ ou bien $C_p^n = p_1 . p_2 . . . .$ $p_{n-1} \cdot p_n$.

Prenons par exemple trois échelles ordonnées, chacune à trois subdivisions où (a) les trois subdivisions des trois échelles sont de valeur positive ou bien (b) les deux premières subdivisions des trois échelles ordonnées sont de valeur positive tandis que la troisième subdivision a une valeur négative, notamment:

(a)			(b)		
Q_1	Q_2	Q_3	Q_1	Q_2	Q_3
1+	1+	1+	1+	1+	1+
2+	2+	2+	2+	2+	2+
3+	3+	3+	3−	3−	3−

Il est évident qu'aussi bien pour (a) que pour (b) le nombre de toutes les combinaisons $(k_1,. . . .,k_n)$ sera le même, c'est-à-dire $C_p^n(a) = C_p^n(b) = 3.3.3 = 27$. Ces combinaisons se rangent respectivement, comme suit:

(a)	N	(b)	
111	1	111	
112	2	112	
113	3	121	
121	4	122	
122	5	211	I
123	6	212	
131	7	221	
132	8	222	

133	9	113	
211	10	123	
212	11	213	} II
213	12	223	
221	13	131	
222	14	132	
223	15	133	
231	16	231	} III
232	17	232	
233	18	233	
311	19	311	
.	.	.	
.	.	.	} IV
.	.	.	
332	26	332	
333	27	333	

La colonne centrale (1, 2,. . .,26, 27) indique le numéro d'ordre des combinaisons (a) et (b) dans l'ordre décroissant.

Pour (a) : $p_1^+ = 3$, $p_2^+ = 3$, $p_3^+ = 3$. Dans ce cas chaque subdivision de la première échelle ordonnée est combinée dans un ordre décroissant successif avec chaque subdivision des deux autres échelles ordonnées.

Pour (b) : $p_1^+ = 2$, $p_2^+ = 2$, $p_3^+ = 2$ et $p_1^- = 1$, $p_2^- = 1$, $p_3^- = 1$. Dans ce cas sont combinées dans un ordre décroissant successif tout d'abord les subdivisions à valeur positive des trois échelles et on reçoit 8 combinaisons:
$I\ C_p^n = p_1^+ \cdot p_2^+ \cdot p_3^+ = 2.2.2 = 8$.

Ensuite la subdivision de valeur négative de Q_3 se combine avec les deux subdivisions de valeur positive de Q_1 et de Q_2 et on reçoit 4 combinaisons: II $C_p^n = p_1^+ \cdot p_2^+ \cdot p_3^- = 2.2.1 = 4$.

Puis la subdivision de valeur négative de Q_1 se combine avec les trois subdivisions de Q_3 et avec les deux subdivisions de valeur positive de Q_1 et on reçoit 6 combinaisons:
$III\ C_p^n = p_1^+ \cdot p_2^- \cdot (p_3^+ + p_3^-) = 2.1.3 = 6$.

Ensuite la subdivision de valeur négative de Q_1 se combine avec les trois subdivisions de Q_2 et de Q_3 et on reçoit 9 combinaisons: IV $C_p^n = p_1^- \cdot (p_2^+ + p_2^-) \cdot (p_3^+ + p_3^-) = 1.3.3 = 9$.

Par conséquent C_p^n (b) $= I\ C_p^n + II\ C_p^n + III\ C_p^n + IV\ C_p^n = 8 + 4 + 6 + 9 = 27$.

Si toutes ou quelques-unes des échelles ordonnées ont deux ou plusieurs subdivisions de valeur négative, on procède de la même façon; tout d'abord on combine toutes les subdivisions de valeur positive de toutes les échelles ordonnées; ensuite on effectue une combinaison de toutes les subdivisions de valeur négative de Q_n avec toutes les subdivisions de valeur positive de Q_1, Q_2,. . .Q_{n-1}, etc.

A partir des données de l'étude sociologique de la religion on a élaboré l'échelle (b) pour mesurer l'autodidactie. Lors de cette étude l'autodidactie des personnes a été étudiée à partir de trois parties intégrantes de sa structure spécifique — lecture de la littérature scientifique, lecture d'oeuvres littéraires et lecture des journaux. Pour chacune de ces trois parties intégrantes on a élaboré une échelle ordonnée à trois subdivisions d'ordre décroissant:

Q_1 Q_2 Q_3
1^+ 1^+ $1^+ = $lit régulièrement
$2^\pm$ 2^+ $2^+ = $lit irrégulièrement
3^- 3^- $3^- = $ne lit pas

Ces trois échelles ordonnées ayant été aussi rangées dans un ordre décrois-sant: les spécialistes ont pu conclure que la lecture de la littérature scientifique (Q_1) est la plus profitable à l'autodidacte, suivie par la lecture des journaux (Q_2), la lec-ture des oeuvres littéraires venant en troisième lieu.

3

Dans certains cas la combinaison s'effectue de façon plus compliquée. Par exemple lors de l'élaboration d'une échelle combinatoire de la religiosité des per-sonnes étudiées.

A partir des données de notre étude sur la religiosité (1962), trois échelles or-données ont été élaborées dans l'ordre décroissant suivant: Q_1— présence et degré de consience religieuse ou non-religieuse, Q_2— assistance à la messe, Q_3— mani-festations religieuses et non-religieuses dans le mode de vie (lors de la naissance, du mariage, de l'enterrement).

Les subdivisions de Q_1 dans l'ordre décroissant sont les suivantes:

1^+ consience non-religieuse jusqu'à 1945;

2^+ conscience non-religieuse après 1945;

3^- religiosité du III-ème degré, c.-à-d. conscience religieuse très faible, presque uniquement psychologique;

4^- religiosité du II-ème degré, c.-à-d. conscience religieuse moyenne plutôt psychologique qu'idéologique;

5^- religiosité du I-er degré, c.-à-d. conscience religieuse très forte idéologique et psychologique.

Par conséquent: $p_1^+ = 2$, $p_1^- = 3$.

Les subdivisions de Q_2 dans l'ordre décroissant sont:

1^+ non-assistance à la messe;

2^- assistance irrégulière;

3^- assistance régulière.

Par conséquent: $p_2^+ = 1$; $p_2^- = 2$.

Les subdivisions de Q_3 dans l'ordre décroissant sont:

1^+ après 1945 le nombre des manifestations non-religieuses correspond au nombre des événements vécus (naissance, mariage, enterrement);

2^- deux manifestations non-religieuses et une religieuse;

3^- une manifestation non-religieuse et une religieuse, le troisième événement n'étant pas vécu; ou aucune des trois événements n'étant vécu;

4^- deux manifestations religieuses et une non-religieuse;

5^- le nombre des manifestations religieuses correspond au nombre des événe-ments vécus.

Par conséquent: $p_3^+ = 1$; $p_3^- = 4$.

Ici par définition les personnes qui n'ont pas de conscience religieuse, n'assis-tent pas à la messe lors des jours de fête ordinaires, ni régulièrement, ni irréguli-èrement; les personnes religieuses du III-ème et du II-ème degré ou bien n'assi-

stent pas ou bien assistent irrégulièrement à la messe; les personnes religieuses du I-er degré ou bien n'assistent pas ou bien assistent irréguilièrement à la messe; enfin toutes les personnes — les non-religieuses et les religieuses de III-ème, du II-ème et du I-er degré — peuvent avoir des manifestations religieuses et non-religieuses exprimées dans les subdivisions de Q_3. Voilà pourquoi la combinaison ici se réalise par le principe de la même manière comme pour (b), mais d'abord — la combinaison des deux premières subdivisions de Q_1 avec la première subdivision de Q_2 et avec toutes les subdivisions de Q_3: $I\ C_p^n = p_1^+ \cdot p_2^+ \cdot (p_3^+ + p_3^-) = 2.1.5 = 10$; ensuite la troisième et la quatrième subdivisions de Q_1 se combinent avec la première et la deuxième subdivisions de Q_2 et avec toutes les subdivisions de Q_3: $II C_p^n = (p_1^- - 1) \cdot (p_2^+ + p_2^- - 1) \cdot (p_3^+ + p_3^-) = 2.2.5 = 20$; enfin, la cinquième subdivision de Q_3 se combine avec toutes les subdivisions de Q_2 et de Q_3: $III\ C_p^n = (p_2^- - 2) \cdot (p_2^+ + p_2^-) \cdot (p_3^+ + p_3^-) = 1.3.5 = 15$.

De cette façon on a obtenu une échelle combinatoire à 45 subdivisions de la religiosité des personnes étudiées.

4

Quand l'échelle combinatoire s'élabore manuellement, il est nécessaire de constituer la liste de toutes les combinaisons dans un ordre défini successif et de marquer leur numéro d'ordre, comme il a été fait pour (a) et pour (b). Ensuite les données du questionnaire pour chaque personne étudiée sont portées sur un tableau conformément aux subdivisions de chaque échelle combinatoire et se transmettent ainsi pour la réaliation d'une analyse de régression, de corrélation ou autre sur calculateur électronique. C'est de cette façon que nous avons procédé lors de l'analyse des données de l'étude sociologique de la religion.

Mais cela est possible pour un nombre limité de personnes et pour un nombre restreint d'échelles combinatoires à peu de subdivisions. Ces limitations ne comptent pas si l'élaboration des échelles combinatoires est effectuée sur calculateur électronique. Dans ce cas il n'est pas nécessaire que le calculateur électronique constitue et conserve dans sa mémoire la liste de toutes les combinaisons de chaque échelle et indique leurs numéros d'ordre respectifs. L'information sur chaque personne est passée sur calculateur électronique selon les subdivisions des échelles ordonnées. Le calculateur électronique détermine la place de chaque personne sur chacune des .échelles ordonnées servant à l'élaboration d'une échelle combinatoire donnée; ensuite à partir du nombre obtenu, signifiant quelque combinaison $(k_1, \dots, k_n)$, le calculateur électronique au moyen de calculs correspondants, trouve directement le numéro d'ordre de cette combinaison. Ce calcul peut s'effectuer d'après la formule suivante:
$C(k_1, \dots, k_n) = [(k_1 \cdot p_2 + k_2) \dots p_{n-1} + k_{n-1}] \cdot p_n + k_n + 1$ où la valeur numérale de chaque „k" doit être diminuée préalablement par une unité, c.-à-d.: $k_1 - 1$, $k_2 - 1, \dots, k_{n-1} - 1, k_n - 1$.[3]).

[3] Le même calcul peut s'effectuer d'une autre manière — voir: Dimitar Penkov, Descriptions mathématiques d'une méthode de l'élaboration d'échelle, Bul. «Études sociologiques», No. 4, 1968.

Par exemple le numéro d'ordre de la combinaison (131) de la liste (a) s'obtient de la manière suivante:

$k_1 = 1-1 = 0$; $k_2 = 3-1 = 2$; $k_3 = 1-1 = 0$;

$C_{(131)} = (0 . 3+2) . 3+0+1 = 6+1 = 7$.

Il est plus compliqué de trouver le numéro d'ordre de cette même combinaison (131) de la liste (b).

On calcule tout d'abord le nombre des combinaisons de toutes les subdivisions de valeur positive des trois échelles ordonnées; I $C_p = p_1^+ + p_2^+ . p_3^+ = 2.2.2 = 8$; ensuite on calcule le nombre des combinaisons de valeur positive de Q_1 et Q_2 avec les subdivisions de valeur négative de Q_3:

II $C_p^n = p_1^+ . p_2^+ . p_3^- = 2.2.1 = 4$; ensuite on trouve le numéro d'ordre de $C_{(131)}$ dans III C_p^n:

$k_1 = 1-1 = 0$; $k_2 = 1-1 = 0$; $k_3 = 1-1 = 0$;

III $C_p = (0 . p_2^- + 0) . p_3^+ + k_3 + 1 = 0 + 1 = 1$;

$C_{(131)} = 8+4+1 = 13$.

C'est de cette façon à présent qu'un calculateur électronique détermine la place de chacune des 18 994 personnes, embrassées par l'étude sociologique de la ville et du village sur 22 échelles combinatoires. Mais les résultats ne sont pas encore obtenus.

La méthode proposée a été appliquée avec succès lors de l'analyse des données de l'étude sociologique de la religion. Nous espérons que son application à l'analyse des données de l'étude de la ville et du villsge réussira aussi.

IV. POWER AND THE PUBLIC

IV. POUVOIR ET PUBLIC

SOME NOTES ON THE POSSIBILITIES OF POLITICAL
INTERVENTION OF THE ITALIAN
STATE BUREAUCRACY*

FRANCO FERRARESI

ITALY

1. THE PROBLEM

Among the various aspects of the bureaucratic phenomenon one has always attracted the attention of scholars and social analysts, and that is bureaucracy's political role. Opinions on this vary between two opposite evaluations. Some observers accuse bureaucracy of wielding too much power, and of thus dispossessing the legitimate political authorities; others maintain that bureaucracy is too pliable to the desires, not always lawful, of politicians and pressure groups.

This divergence of opinions reflects a real variability in bureaucratic behavior, caused by a basic ambivalence of bureaucracy as a social structure: on the one hand, in order to perform efficiently its functions, bureaucracy needs a certain degree of autonomy. In other words, it must be able to apply objectively and without interference the technical norms which regulate its behavior. On the other hand, this very autonomy can make bureaucracy a power center, thus enabling it to by-pass the constitutional organs and bodies which carry the formal responsibility for political decision-making. The purpose of this paper is to offer some suggestions for assessing the position of the state bureaucracy in Italian political life, within the framework of this debate.

2. COMPARATIVE FRAMEWORK

A bureaucratic structure's amount of political power depends on a series of factors which must be preliminarily singled out, in order to orient correctly any factual analysis.

The first object of inquiry is the political system within which bureaucracy operates : the main problem concerns the distribution of power therein (whether, for example, it is more or less centralized), and especially the existence of power vacuums where bodies such as bureaucracy may step in.

Somewhat more detailed are the variables which need to be examined with regard to bureaucracy itself, beginning with the available *facilities*, both those of juridical-instrumental (such as legislation) and those of personal type. Concerning the latter, the employees' orientations and identifications, their interpretation of institutional tasks, and particularly, their attitute towards the management of political power need close scrutiny. These orientations are influenced by such factors as the personnel's socio-economic background, their professional characteristics (skill, autonomy, *esprit de corps*, etc.), which, in their turn, depend very much on the agencies, structures and procedures through which bureaucracy performs its socializing and incentivating functions.

Other relevant factors are connected with structural and organizational features: modes of the distribution of labor, patterns of the centralization of authority, etc.

All these variables, whose reciprocal interaction is obviously much more complex than in the above sketch, must be interpreted in the light of bureaucratic structure's history and tradition. On these premises, it is now possible to attempt an analysis of the Italian situation, beginning with a rapid overview of the general political system.

3. THE ITALIAN POLITICAL SYSTEM

Most observers agree on the significance of two of the system's main features. The first is a general condition of deep ideological fragmentation which appears at all levels of the polity. The second is the poor division of labor existing between some of the most important functional structures of the polity, such as interest groups and political parties. This appears in the competition existing between parties and interest groups concerning the transmission of the same kind of political demands. Political parties do not perform an aggregative function on the specific requests articulated by interest groups, since they are themselves channels for the transmission of specific, particularistic political interests.

In such a context, political decisions very often take the form of private, more or less open deals between parties and representatives of the various interests. It is difficult to single out, among such forces, a precise power hierarchy, or to identify actually ruling groups. What seems to happen is that most of the moderate-conservative groups having some consistence are able to satisfy, to some degree, their specific needs, and, at the least, to prevent damaging decisions against themselves : one could speak, for this reason, of veto-groups. This state of affairs, coupled with the governments' weakness and instability (which is one of its effects) seriously reduces the possibility of introducing system-wide structural reforms.

Two elements of the situation thus described must be underlined, in order to evaluate what possibilities bureaucracy has of acquiring "undue" political power. In the first place, the weakness of the political institutions creates a wide space for the intervention of outside forces, such as bureaucracy. On the other hand, this very weakness of political authority leaves bureaucracy, without protection *vis à vis* the pressures coming from interest groups. This means that, if for internal reasons bureaucracy cannot acquire a politically dominating position, in order to achieve its objectives it will have to play the pressure groups game. This will bear important consequences for bureaucracy's action, in terms of the ends attainable, the alliances permissible, the strategies available, etc.

4. BUREAUCRACY

It is now necessary to turn our attention to the specific features of Italian bureaucracy, in order to estimate its possibilities of stepping into the power vacuums which have just been described.

The analysis will begin with a brief history of Italian administration.

A) History

Until 1848 most Italian states were run as the private property of their sovereigns (patrimonialism). It is not possible, therefore, to talk about *public* employment for this period, as the bureaucrats were the king's *private* employees.

The emergence of the "State of Law" as a product of nineteenth century liberalism brought about a conception of the state as the custodian and protector of all citizens' rights that had many effects on public employment, only two of which can be mentioned here. In the first place the employees ceased being the sovereign's private servants and became, at least theoretically, subject to the law. In the second place, the view of the state's tasks which emphasized its guarantee and control functions required a civil service made up by employees with a prevalently juridical education.

The employees' theoretical subjection to the law (as opposed to the will of the master) had, at the beginning a very limited effect on their *de facto* conditions : no specific provisions regulating their status were immediately approved. Consequently, although in Italy no spoils system was ever explicitly codified, for many decades the employees had practically no protection against dismissals, and arbitrary measures in general by their political superiors. Only in 1908, the Parliament approved a general statute regulating, however, illiberally, the status of public employees.

The following period coincided with the long dominance of Italian political life by G. Giolitti and is by many considered as the golden age of Italian bureaucracy. Giolitti had been himself a high civil servant and understood the workings of bureaucracy as few politicians did before or after him. This, in a sense, turned out to be also a mixed blessing: Giolitti was extremely skilful in plying bureaucracy to his needs.

In any case this relatively favorable period came to an end when fascism took over the state. Bureaucracy was then radically and formally subjected to political rule and lost even some of the juridical guarantees it had acquired during the

preceding years: we need only to mention facts like compulsory party membership
for employees, the possibility of dismissing functionaries because of their poli-
tical dissent, and so forth. Besides this, fascism frequently committed disruptive
actions, like mass recruitment of employees for political reasons, alterations of
the merit classifications, etc.

It is easy to see, then, that during the 75 years period between the country's
unification and the end of World War II, Italian bureaucracy enjoyed a very short
time of "glory", and even this was not without sharp limitations.

The political and social evolution which has taken place after the war has not
altered in any significant way the administration's power position. Bureaucracy
is still weak in an "objective" sense, while, "subjectively", its members lack the ag-
gressive spirit which would permit strong political interventions. We shall now turn
our attention to factors which contribute to determine such a situation.

B) Facilities

The facilities available to bureaucracy for carrying out its functions also have
an obvious effect on its possibilities of acquiring political power. First among them
is the *legislative* framework which regulates the administration's fields and modes
of intervention.

As a consequence of the above mentioned inefficiency of the highest decision-
making bodies, the laws framing administrative actions are in Italy extremely ar-
chaic. The basic norms are still those laid down in the Administrative Unification
Statutes of 1865; statutes which, in many respects, could be considered even for
those times largely inadequate.

Since then no attempt at a general reform has been successful, while additions
and amendments to single provisions are multitudinous. More serious than the
technical inadequacies are, perhaps, the difficulties caused by the philosophy in-
spiring administrative legislation. The principles prevailing are still those of nineteenth
century liberalism, according to which, as was said above, the state's main tasks
are those of guaranteeing the conditions for the enjoyment of citizens' rights, while
direct intervention powers are rather limited. In recent years, under the mounting
pressure of social and economic needs, there has been a marked expansion of the
state's socio-economic interventions: yet the administration's powers remain large-
ly control powers, while direct initiative possibilities are relatively few.

Another consequence of such a philosophy has been mentioned above and
concerns that important "facility" for administrative action whis is personnel, seen
in its professional capacity. Since its beginning, Italian bureaucracy has been pre-
valently staffed with juridically trained employees: in 1961, the employees with a
College (*Università*) degree were, in the State's administration, around 26,000,
about 50% of which had law degrees. Although more recent information is lack-
ing, it is fair to say that this state of affairs has worsened, since the administra-
tion's diminishing competitivity on the labor market has further reduced its abi-
lity to recruit technically trained personnel. This is true not only in "traditional"
technical fields such as chemistry, engineering, geology etc., but also for "newer"
sectors like statistics, urban planning, sociology and so forth, all disciplines which
haven't yet gained admission to the state's administration.

The facilities available to the Italian state bureaucracy in the legislative, in the personal or in the strictly instrumental sector, therefore, are gravely inadequate for the necessities of a modern country. The effect can be only a serious limitation on bureaucracy's possibilities of acting in the social, political and economic fields.

C) The bureaucrats and the structure's influence on their orientations

C1) Social and geographical origin

Some of the professional features of the members of Italian bureaucracy have already been mentioned. It is now necessary to observe more closely other characteristics, beginning with that of social and geographical origin. It is well known that a large majority of employees are middle to lower-middle class southerners. More precisely, in 1961 about 63% of the *Carriera Direttiva* functionaries were born in the South and on the Islands. Sociologists estimate that between 65% and 75% of the total come from middle to lower-middle class families. This shows a remarkable degree of social and geographical homogeneity among the state's functionaries. The specific features of this homogeneity indicate that Italian administration, even at the higher levels, is not staffed with members of the ruling, or at least upper classes, traditionally oriented to managing public affairs, as, for example, is partly the case for French and British bureaucracy. On the contrary, in Italy, public employment, even at the upper echelons, is sought after especially in the underdeveloped areas, and by members of relatively deprived classes. On these grounds alone it would be easy to draw the inference that in Italy public employment is considered by those who enter it, mainly, as a means of solving their economic problems in a labor market characterized by a great deal of unemployment. The impression is confirmed by an analysis of the motivations of the functionaries studied during ISAP's research: about 62% of those interviewed declared that they had chosen public employment out of economic considerations (including security); if one adds career motivations the total reaches 74% of the sample. Only 3.5% of the functionaries were motivated by political reasons, and a similar percentage by family traditions; prestige was mentioned only by 2% of those interviewed.

C2) Integration mechanisms

These motivations can hardly be considered as the starting point for a group aggressively striving for political power. Yet it is theoretically possible for bureaucracy to act on its members' personalities so as to create among them cohesion, institutional loyalty, and *esprit de corps* strong enough to allow for aggressive political actions. It is then necessary to ask how Italian bureaucracy operates on its personnel.

We can begin by noting that Italian bureaucracy cannot count on one of the instruments most effective for building *ésprit de corps*: namely, professional schools comparable, for example, to France's *Grandes Ecoles*. (Caserta's *Scuola Superiore di Amministrazione* has little or no effect in this direction, being basically a technical re-training school, whose courses don't last more than few weeks.)

Concerning *recruitment*, the present procedures in accordance with nineteenth-century principles are especially designed to grant equal chances of admission to all applicants, while the instruments which should evaluate the future functionary's skills are, consequently, very general, consisting mainly of traditional-type examinations. These can, at the most, measure some theoretical notions, but are hardly suitable for a thorough assessment of the applicant's abilities. Lacking effective selection criteria, much recruitment takes place outside formal rules: between 1956 and 1961 about 32% of all *Carriera Direttiva* functionaries have been recruited without public examinations. Less evident, but perhaps more significant, is the fact that this situation of normlessness grants a large amount of discretionary, if not arbitrary powers to the examiners, thus opening the way to heterodox evaluation criteria.

Something similar happens in the *incentives* sector, most important among which are career patterns. Here also, since functional differences have no juridical sanction, the principal way of rewarding functionaries is to promote them to a higher rank, in a strictly hierarchical ladder. Often no real change of tasks takes place after promotion, so that the latter determines only a salary increase. (On the other hand, salary raises can be granted only by promotion, hence many more promotions than would be justified.)

The main problem, however, concerns advancement procedures, basically reduced to three: seniority, evaluation by superiors, and examinations. Leaving aside seniority, both other techniques are inadequate. The exams are, as usually, too far removed from daily administrative tasks, while evaluations are theoretically based on yearly reports which are practically useless since by long tradition, almost all functionaries obtain on them the highest ranking. Here again there is a wide discretionary margin for higher officers, and consequently many are the possibilities of outside interventions.

It is interesting to note that even in such a theoretically objective sector as *salaries* the same dynamics prevails. The apparent salaries are, especially at the lower echelons, undoubtedly low. There are, however, many fringe benefits of more or less mysterious origin which, especially at the higher levels, can go as far as doubling or tripling the official figure. Yet these benefits are mostly hidden, and the criteria of their allocation remain vague and cloudy.

In all these key sectors, then, a similar pattern takes shape. Formal rules and procedures are inadequate because they have been drawn up according to archaic and disfunctional principles. Daily practice by-passes or circumvents them, thus opening the way to arbitrary interventions on the part of higher ranking officers; through these or directly, pressure groups and politicians can also intervene.

It is not surprising that the functionaries are very critical of this situation: about 52% of our sample think that recruitment procedures are not, or are not always objective, while 62% of them think they are not effective in selecting the best candidates. About as strong are the opinions concerning advancement patterns: around 60% of those interviewed do not think that the best employees have a chance of getting ahead, 27% are uncertain, and only 12.2% are satisfied. In other words, by far the largest majority of functionaries do not believe that, in Italian bureaucracy, the best qualified reach top positions. (It is interesting to compare these attitudes with those, prevailing in other contexts: in a recent survey of British administration N. Walker found that 19.4% of those interviewed thought that the pro-

motion system worked, at their level, "as fairly as possible"; 46.3% that it worked "fairly on the whole"; 24.4% "a little unfairly", and only 9.9% "very unfairly".)

This general situation creates, within Italian bureaucracy, a deep sense of unpredictability and uncertainty concerning each individual's professional future, which, together with the possibilities of unfair competition is far from conducive to group solidarity and *esprit de corps*. Indeed it determines a general climate of resignation towards outside interventions which is exactly the opposite of what should be present, were bureaucracy to start aggressive policies.

A similar situation prevails in another important incentive sector, that connected with the rational use and allocation of personnel with regard to their responsibilities. The structure of authority within the bureaucracy is strongly centralized (although real power is somewhat more dispersed) so that at the lower levels of the *Carriera Direttiva* the tasks are often extremely menial, and in any case much below a college graduate's capabilities. More generally, as a consequence of the shortcomings in the patterns of division of labor and of promotion, personnel is frequently allocated to different tasks without any apparent rationality. So it happens that employees who have been promoted without there being any real need for them at the upper level, remain practically "unemployed", whereas others perform tasks above their formal status, but without the "honors" that go with them, hence with strong feelings of exploitation.

A last factor can be mentioned in passing, and that is the low *prestige* which bureaucracy nowadays enjoys in Italian society, especially in its most industrialized sectors. The bureaucrats are acutely aware of this attitude (as is proved, for example, by the data on initial motivations, where prestige is rarely mentioned) and this adds to their general feeling of bitterness and powerlessness.

This general situation (which, needless to say, has some exceptions, in a few, very cohesive sectors, like the Ministry of the Interior) has clear repercussions on the *perception bureaucrats have of their work*, to which we shall now briefly turn our attention.

C3) The bureaucrats' orientations

In the course of ISAP's survey, the bureaucrats were interviewed on the general conception they have of administration as a job, or, in other words, on the subjective meaning such a job has for them. There were three questions, concerning: a) their initial motivations; b) the most important criteria by which their work experience can be evaluated; and, c) job satisfactions. In all three cases there was the possibility to answer in a *political* sense. The concept used of "political" was very wide: it included, on the one hand, the subject's capability to perceive the public purpose of his activity ("public service"); on the other, attitudes indicating "desire for power".

In spite of the notion's width, the percentage of those indicating "political" orientation was very low. We saw above how small the number of functionaries choosing public employment out of "political" reasons is. Even fewer are the employees using "political" criteria when they evaluate in a comprehensive way their work experience (4 out of 256). There is, however, a marked increase in "political" answers concerning work satisfactions, which reach about 25% of the total. The last finding needs two qualifications: in the first place,

satisfactions involve an employee's personality less deeply than the other two sectors mentioned above. In the second place, only about 3.5% of these "political" satisfactions can be considered "power" satisfactions. (It might also be added that one of the two ministries studied in our research — that of the Interior — is by far the most politicized in the whole administration, so the figures are probably above the general administration's average.)

The amount of "political" orientations, then, is rather low; at this point, it is interesting to know what their content is. Most observers tend to underline its *defensive* character, and our observations confirm this image. Typical, in this sense, are the following words of a prefect we interviewed: *Our function is more and more declining. . . First of all, we lack a strong government, of which we should be the secular arm. Then we miss all connected powers. We play somewhat on tradition and what is left of prestige: but if somebody is willing to take advantage of it, like for instance the communists, then we are on the verge of chaos. The main satisfaction is that we contribute to delaying ruin. The curve, no doubt, is going down, and the prefect tries to keep the balance, postponing and delaying problems so that they get solved by themselves.*

These words can be taken as a summary of the present ideology of large sectors of Italian bureuacracy. The inadequate facilities available to bureaucracy, together with structural conditions which hinder the personnel's solidarity and frustrate its morale, oppose the emergence of outwardly aggressive attitudes among the functionaries. Moreover, traditional bureaucratic ideology sees the bureaucrat's function especially in terms of guaranteeing and defending legality, hence the Law, hence the State. Such an ideology acquires markedly defensive overtones in a context where the weakness of the state's institutions (of which the bureaucrats are only too willing to see the subjective reflection in their own class's loss of social prestige), together cause and effect of the growing aggressiveness of political parties and pressure groups, generates the impression that the state is disintegrating.

CONCLUSION: POLITICS AND ADMINISTRATION IN ITALY

The picture which we have drawn so far has laid heavy emphasis on bureaucracy's weak points. In order not to overestimate their importance and their effects on Italian political life, it is necessary to recall the context within which bureaucracy acts. This context is characterized by a general weakness of the state's institutions, which contrasts with a strong, aggressive presence of political parties and pressure groups. Bureaucracy, then, is the object of pressures coming from all directions, against which it can hardly be defended by political authority, which itself has become a pressure group. Yet this very situation allows even a weak bureaucracy like the Italian one to fight, politically, for its own interests and for those of the groups with which it identifies most closely.

Since, however, bureaucracy is not strong enough to exercise power directly, as a dominating factor of Italian political life, its interventions having general political scope (hence, for example, not simple conflicts over working conditions), carry, by and large, negative connotations: their aim is to prevent, rather than to promote, to delay some initiatives, rather than to urge others. In order to assess bureaucracy's possibilities in this context it is necessary to keep in mind the strategic position that public administration enjoys in a modern state, and which al-

lows it to intervene in most important moments of public life. This institutional position, together with bureaucracy's general weaknesses, conditions its strategic possibilities, compelling it to play on a relatively fixed *tableau*.

We can now try to see what shape bureaucracy's intervention can take concretely. Let us imagine that bureaucracy is hostile to a project or program not yet transformed in authoritative policy (probably the most frequent situation). Without pretending to exhaust all possibilities, we can think, by way of example, of the following steps in bureaucracy's action. In the first place bureaucracy tries to set up an alliance with other forces opposing the project, and, working especially through them, tries to achieve the project's total cancellation. If political strength behind it is stronger than opposition, and makes it pass, bureaucracy can intervene in the preparatory stages, joining committees, study groups, etc.: the object, here, is to water down as much as possible the project's contents. If, in spite of this all, the bill finally passed by Parliament is "dangerous" enough, its execution is still very much in bureaucracy's hands, and this allows for further *de facto* modifications. The last observation indicates that probably the effectiveness of bureaucracy's interventions tends to increase the closer their object is to the "executive" end of the decision-execution *continuum*. It is also likely that such effectiveness increases with the lowering of the question's political relevance. We have elsewhere tried to follow an example of bureaucracy's action, concerning the decentralization of administration and political decision-making through the establishment of Regions, and the above outline has proved rather useful.

It could be easy, however, to exaggerate the importance of bureaucracy's political interventions. In order to evaluate their real dimension, it is necessary to keep in mind the basically moderate character of the main political choices taken in Italy in the past decades, together with some coincidences in ideological orientations between bureaucracy and some of the most important pressure groups. It is, moreover, necessary to remember that the legitimacy granted by society to the political system (including bureaucracy) is rather weak, and that both bureaucracy and political structures are seriously inefficient. This has created, in spite of frequent reciprocal accusations, an objective condition of alliance between politics and administration, which occasionally borders on complicity. Conflicts are always kept within manageable limits, and are never such as to endanger permanently the system. This can be demonstrated, for example, by the fact that the political class has never really pressed for a reform of public administration, while bureaucracy has never openly exposed the frequent violations of the law committed by politicians.

PROPOSITIONS THÉORIQUES POUR UNE RECHERCHE EXPÉRIMENTALE SUR LES MOUVEMENTS SOCIAUX URBAINS[1]

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La tradition de la sociologie urbaine est axée sur la problématique de l'intégration sociale, comme il est normal si l'on se souvient de la demande qui en est à la base, étroitement liée au paternalisme réformiste visant à effacer les méfaits de l'industrialisation capitaliste sur le plan de la consommation collective.

Or, dans la société industrielle avancée, les problèmes urbains deviennent de plus en plus enjeu politique et lieu stratégique des nouvelles formes de lutte des classes. Les instruments d'analyse forgés par la sociologie urbaine sont alors, non seulement des instruments d'adaptation au système comme ils l'ont toujours été, mais parfaitement inopérants, du point de vue de la recherche, pour rendre compte de l'essentiel des problèmes posés par la pratique sociale.

De nouvelles formulations théoriques sont nécessaires pour expliquer cette importance croissante des „problèmes urbains" dans la politique, pour préciser leur portée et mettre en relief les mécanismes sociaux sous-jacents. Il s'agit de contribuer à jeter les bases d'une analyse sociologique de la politique urbaine.

I. ÉLÉMENTS THÉORIQUES SUR L'URBAIN ET LA POLITIQUE

Parler de politique urbaine renvoie à trois spécifications théoriques: le politique, la politique et l'urbain.

Le politique désigne les structures par lesquelles une société exerce la régulation des différentes instances qui la composent et assure la domination d'une classe sociale particulière.

La politique désigne le système de rapports de *pouvoir*. Le lieu théorique du concept de pouvoir est celui des rapports de classe. On entend par pouvoir la ca-

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[1] Ce texte essaie d'apporter certains outils conceptuels qui permettent d'avancer dans l'analyse du problème posé. Ils supposent un travail préalable de critique de la littérature sociologique et urbanistique existante, ainsi que certaines bases théoriques qu'il est impossible d'expliciter entièrement quand il s'agit de les développer. Je renvoie, pour la base documentaire et bibliographique, aux références signalées dans mes articles «Théorie et idéologie en Sociologie Urbaine», Sociologie et Sociétés, No 2, 1969, et «Vers une théorie sociologique de la planification urbaine», Sociologie du Travail, No 4, 1969.

pacité d'une classe sociale de réaliser ses intérêts objectifs spécifiques aux dépens des autres. Par intérêts objectifs, on entend la prédominance des éléments structurels qui définissent, par leur combinaison, une classe, sur les autres éléments qui sont en contradiction.

Le terme *d'urbain*, une fois éliminée la connotation idéologique relative à la soi-disante *culture urbaine*, désigne, en principe, deux ensembles de problèmes:

a) ceux relatifs à l'organisation sociale de l'espace;

b) ceux relatifs aux processus de consommation collective (consommation=reproduction de la force de travail).

Mais, en fait, l'organisation de l'espace, en tant que telle, relève de ce qu'on peut appeler les problèmes *régionaux*, car il est impensable de ne pas traiter le réseau urbain dans son ensemble. Donc *urbain* spécifie encore plus, faisant appel à une certaine limite territoriale à l'intérieur de laquelle on trouve „la ville". Cette réalité, en dernière analyse, est une certaine *unité résidentielle de la force de travail*. Une agglomération n'est pas définie par une unité productive, car cela se réfère aux entreprises, aux branches, aux trusts, mais par une *unité de consommation collective*, plus ou moins correspondant à l'organisation quotidienne d'une partie de la force de travail (par exemple, le seuil défini par les flux de migrations alternantes établit les limites d'une agglomération).

A l'intérieur d'une frontière ainsi définie, on trouve d'autres éléments (production, échange, gestion symbolique) et, en même temps de sous-ensembles (zones, quartiers), mais on ne peut pas oublier la définition de la frontière car elle établit une spécification par rapport à la consommation.

Les problèmes urbains sont alors les problèmes ayant trait à la consommation collective, définis dans une unité de consommation (l'agglomération) et les problèmes ayant trait à l'organisation et fonctionnement de cette unité dans la mesure où la modification de l'unité a aussi une conséquence sur les processus de consommation en question.

L'agglomération, en tant qu'unité de consommation, joue le même rôle que l'entreprise, en tant qu'unité de production.

Ces éclaircissements permettent maintenant de délimiter l'objet de notre recherche.

Si le champ d'expérience a une unité propre, à savoir l'articulation du *pouvoir* et de *l'urbain*, son appréhension peut être faite essentiellement dans deux perspectives différentes, suivant que l'on s'intéresse aux *structures* ou aux *pratiques*, ou plus clairement, suivant que l'objet théorique soit l'analyse d'une modification des arrangements du système (formation sociale) ou les processus de sa transformation, à savoir, les rapports sociaux en tant qu'expression directe ou réfractée des classes sociales. Si cette différence de perspective est essentielle dans la démarche concrète d'une investigation, nous verrons que, au bout du chemin, elle doit rendre compte de l'ensemble du processus, quel que soit le point de départ, car les structures ne sont que des pratiques articulées et les pratiques que des rapports entre des rapports définis par certaines combinaisons d'éléments structurels.

L'étude de la politique urbaine se décompose ainsi en deux champs analytiques, indissolublement liés dans la réalité sociale: la planification urbaine, sous ses différentes formes et les mouvements sociaux urbains.

Nous abordons ici, l'élaboration d'outils conceptuels adéquats à cette seconde perspective. Ce qui exige l'introduction d'un cadre théorique dont la seule justification sera celle de la fécondité dans la recherche concrète.

A la base de notre analyse se trouvent les concepts de système urbain et de système d'agents urbains.

Par *système urbain* on entend l'articulation spécifique des éléments de la structure sociale (économique, politico-jurdique, idéologique) à l'intérieur d'une unité de consommation collective.

Le *système urbain* (structure sociale à la base des processus sociaux dans les unités de consommation collective) est défini par l'ensemble des rapports entre ces éléments fondamentaux:

Élément *P* (Production): Moyens de production spécifiques.

Élément *C* (Consommation): Force de Travail spécifique.

Élément *E* (Échange) entre *P* et *C*, à l'intérieur de *P*, à l'intérieur de *C*.

Élément *G* (Gestion) ou régulation des rapports entre *P*, *C* et *E* en fonction des lois structurelles. *G* représente l'articulation avec le système politique, sans pour cela épuiser les rapports avec ce système.

Élément *S* (Symbolique) qui exprime la spécification de l'idéologique au niveau des formes spatiales.

Toutefois, dire que l'élément Consommation spécifie la reproduction de la force de travail ou l'élément Production — la reproduction des moyens de production au niveau de l'unité urbaine, renvoie à une problématique beaucoup trop vaste pour pouvoir être traduite dans ces propositions explicatives. Il faut donc décomposer ces éléments.

L'analyse interne de chaque élément du système urbain, pour ne pas rester intuitive, doit mettre à l'œuvre un même principe. Les spécifications ne doivent pas introduire de nouveaux éléments par rapport à ceux déjà définis théoriquement. Nous dirons donc que chaque élément se décompose en sous-éléments définis par la réfraction sur lui des autres éléments (y compris lui-même) et/ou des autres systèmes de la structure sociale.

1) *Consommation*

L'élément consommation exprime, au niveau de l'unité urbaine, *le processus de reproduction de la force de travail*. Nous ferons donc la distinction entre reproduction simple et élargie de la force de travail et nous distinguerons dans la reproduction élargie la réfraction des trois systèmes: économique, politico-juridique et idéologique.

Exemple

reproduction simple de la force   *Cl*   Logement et équipement matériel
de travail   minimum (égouts, éclairage,
                                        voirie, etc...)

reproduction élargie de la force
de travail

= élargissement à l'intérieur du
système économique (repro-   Espaces verts, pollution, bruit, etc...

duction biologique)
= élargissement sur le système
institutionnel (politico-juridique)
(développement des capacités +
socialisation)
= élargissement sur le système
idéologique

C2 (environnement)

C3 Équipement scolaire

C4 Équipement socio-culturel

2) Production

Distinction fondamentale à faire entre les instruments de travail et l'objet de travail (matière première notamment), d'une part, de l'autre dans l'orientation de la production au système organisationnel en tant que tel ou en tant qu'organisation productive.

		Exemple
= Éléments internes au procès de travail	- Instruments de travail (*Pl*)	Usines
	- Objet de travail (*P2*)	Matières premières
= Rapport entre le procès de travail et système économique	(*P3*)	Environnement industriel (milieu technique)
= Rapport entre procès de travail et autres systèmes, ainsi qu'avec l'organisation sociale	(*P4*)	Gestion, informations (bureaux)

3) Échange

L'élément *échange*, par définition, peut se décomposer en autant de sous-éléments qu'il y a de transports possibles à l'intérieur ou entre les éléments et systèmes de la structure sociale par rapport à une unité urbaine donnée:

Transfert	*Sous-Éléments*	*Exemple*
Production→Consommation	E1	Commerce et distribution
Consommation→Production	E2	Migrations alternantes (transports urbains)
Production→Production	E3	(. Transports marchandises) (. Ordres et gestion)
Consommation→Consommation	E4	(. Circulation) (. Mobilité résidentielle)
Consommation→Idéologique	E5	Emission d'information, spectacles, etc. . .
Production→Idéologique	E6	Monuments
Consommation→Politique	E7	Centres décisionnels
Production→Politique	E8	Centres d'affaires

4) Gestion

L'élément *gestion* articule le système urbain au système politique et règle les rapports entre les éléments. Il se définit donc par sa position dans une double dichotomie Global / Local (représentant de l'ensemble du système politique ou lié aux conditions locales) et portant sur un des éléments du système ou sur l'ensemble (Spécifique / Général). Ce qui détermine quatre sous-éléments possibles:

	Local	Global
Spécifique (portant sur l'élément)	Gl Agence urbaine	G3 Organisme de planification
Général (portant sur les rapports entre les éléments)	G2 Municipalité	G4 Délégation d'autorité centrale (Préfet)

5) Symbolique

L'élément *symbolique* prendra des formes particulières suivant l'importance relative des éléments et places de l'instance idéologique, en particulier en combinant les effets de *communication* et *légitimation* avec les places d'*émetteur, récepteur* et *relais* par rapport au message.

6) Sous-éléments et système de places

Cette décomposition interne de chaque élément permet d'approcher des situations concrètes dans la mesure où l'on spécifie beaucoup plus l'analyse. Mais si l'on repère le *lieu* d'une contradiction, il faut encore que celle-ci puisse s'exprimer socialement par l'appropriation différentielle de ces éléments par les acteurs. Il y a donc à définir, à l'intérieur de chaque sous-élément des places entre lesquelles se répartiront les acteurs suivant leur position dans la structure sociale. Ce sont ces différences de places occupées par les acteurs qui expliquent des pratiques sociales contradictoires et permettent des transformations dans le système urbain qu'il faut donc non seulement décomposer en sous-éléments mais *différencier*, en précisant, à l'intérieur de chaque sous-élément, des *niveaux* et des *rôles*.

Ainsi, par exemple, en *C*1 (Logement)

. niveaux $\left\{\begin{array}{l}\text{- Logements de luxe}\\ \text{- Logements sociaux }(+, -)\\ \text{- Taudis, etc...}\end{array}\right.$

. rôle $\left\{\begin{array}{l}\text{- Hébergé}\\ \text{- Locataire}\\ \text{- Co-propriétaire}\\ \text{- Locataire}\end{array}\right.$

Les rapports qui entretiennent entre eux et avec la structure sociale, les différents sous-éléments du système urbain, leurs rôles et leurs niveaux, définissent la

conjoncture. L'insertion des agents-supports dans la trame structurelle ainsi cons-
tituée définit le système urbain aux pratiques sociales, seules réalités significatives.

Ceci dit, le système urbain n'est pas extérieur à la srtucture sociale: il la spé-
cifie, en fait partie. Mais dans toute pratique concrète, il faut tenir compte de son
orientation à d'autres niveaux que ceux spécifiés dans le système urbain. Cette
articulation se fait par l'insertion nécessaire des acteurs urbains dans le système
de places économiques, politiques et idéologiques de la srtucture sociale, ainsi que
dans les différentes relations entre les places et qui définissent les systèmes du point
de vue interne.

Concrètement, les acteurs urbains auront une valeur (qui peut être aussi l'ab-
sence (valeur 0) par exemple des acteurs non définis dans le système productif:
les employés) dans les trois systèmes: économique, politico-juridique, idéologique.

D'autre part, dans toute société historiquement donnée, les processus structu-
rellement déterminés s'insèrent dans des formes sociales cristallisées qui en font
la spécificité de chaque moment. Les pratiques „urbaines" naissent à partir de
l'insertion du système urbain articulé à la structure sociale générale, dans ces for-
mes sociales, à partir de cette triple détermination des agents-supports et du champ
des pratiques ainsi constitué.

Organisation sociale évoque trop de domaines et se réfère à trop de formes
pour qu'on ne soit pas obligé de sélectionner certaines caractérisations particu-
lièrement significatives eu égard au problème abordé.

Nous avons considéré comme fondamentales les trois dimensions des *formes
écologiques* (ou relatives à l'organisation de l'espace) à partir de la double dialec-
tique concentration/centralité et de l'articulation ou séparation des fonctions dans
l'espace, la *stratification sociale* (répartition du produit entre les supports) et le *sy-
stème organisationnel* (ou agencement formel des systèmes de moyens spécifiques).

II. LA DÉTERMINATION STRUCTURELLE DES PRATIQUES URBAINES

On entend par pratique urbaine toute pratique sociale relative à l'organisa-
tion interne des unités de consommation collective ou qui, visant les problèmes
généraux de la consommation collective, prend comme champ d'action les unités
urbaines.

Les pratiques urbaines forment système. Mais elles n'ont pas de signification
par elles-mêmes. Leur seule signification est celle des éléments structurels qu'elles
combinent et de ses interactions successives. Ces combinaisons se réalisent au moyen
des agents, à partir de la détermination et appartenance multidimensionnelle de
ces agents-supports. *Le champ des pratiques urbaines est un système de combinai-
son entre combinaisons données d'éléments structurels.* Il réalise et manifeste, à la
fois, les lois structurelles du système, aussi bien de son organisation que de sa trans-
formation.

Le tableau résume l'ensemble des déterminations possibles. Malgré sa com-
plexité il n'est qu'un cadre possible, et un processus social peut être lu suivant dif-
férents niveaux de profondeur. Il peut en effet y avoir mise en rapport des prati-
ques et des conséquences et situations structurelles avec un classement simple qui
combine quelques éléments fondamentaux ou, à l'inverse, analyse d'un processus
particulier entre les sous-éléments. A chaque objet de recherche correspond un élar-
gissement, rétrécissement ou arrangement particulier du champ des pratiques et,

par conséquent, une redéfinition du système d'acteurs-supports. En un mot, tout dépend du „problème" traité. On parle de places et non pas d'individus.

Quel est l'apport réel de ce tableau?

Si l'on se place du point de vue des *structures* (étude de la „politique urbaine"), il permet d'étudier les inputs-outputs de chaque problème traité, ou, plus claire-

Tableau — Système de places déterminant les pratiques urbaines

ment, étant donné une situation de décalage ou contradiction dans un des processus, quelles en sont les conséquences pour le système.

Si l'on se place du point de vue des pratiques, il permet à la fois de déceler les processus de formation de certaines pratiques (par examen des combinaisons structurelles qui en sont la base) et de pouvoir les définir par leurs effets et non pas par leur subjectivité. Du coup, la subjectivité elle-même est éclairée en tant que jouant un certain rôle dans la structure sociale. Le sens n'a de sens qu'en dehors de lui-même. Mais ce dehors ne peut être que la production d'un effet socialement identifiable, donc inséré dans un cadre prédéfini.

Par rapport à une pratique urbaine on peut donc :

Définir la combinaison structurelle (manifestée par les caractéristiques des acteurs) qui l'a suscitée.

Nommer (ou typologiser) la partique, par l'analyse de son *horizon* (conséquences structurelles prévisibles dans la logique de son développement).

Par exemple : — Reproduction du système urbain (Régulation).
— Modification d'un élément du système (Réforme).
— Reproduction, au moyen du système urbain, d'une autre instance structurelle (Maintien de l'ordre).
— Transformation de la loi structurelle du système urbain (Mouvement social urbain).
— Remise en cause de l'autorité système politique (Mouvement social à base urbaine).
— Aucun effet, sauf la pratique elle-même (Mouvement démagogique)

Établir l'histoire naturelle de chacune de ces pratiques, ce qui demande de caractériser l'ensemble des pratiques qui s'articulent et s'opposent à voir dans quelle mesure leur charge structurale de départ et leur horizon différentiel les font disparaître, être subordonnées ou s'imposer. L'étude d'un mouvement social urbain (défini par sa détermination et son horizon) devient alors l'étude de cet ensemble de pratiques contradictoires, réalisant des lois générales mais étant toujours unique parce que conjoncturel.

Avancer des hypothèses sur toutes les combinaisons possibles dans le tableau paraît à la fois excessivement compliqué et largement superflu. En effet, il ne s'agit pas d'épuiser toutes les situations possibles, mais de découper une réalité à l'aide de ces concepts, et obtenir, à la fois, la mise à l'épreuve des lois générales déjà connues et la découverte des nouveaux rapports qui montrent le déploiement différencié de la même logique.

Pour cette raison, nous dirons qu'il n'y a pas d'hypothèses relatives au tableau, mais des *limites* et des *règles opératoires.* Mais ces hypothèses peuvent être suscitées par rapport à une recherche spécifique.

III. HYPOTHÈSES POUR L'ÉTUDE DES MOUVEMENTS SOCIAUX URBAINS

Quelles sont les conditions et les processus de formation de ces mouvements sociaux?

Un mouvement social naît de la rencontre:

1) d'une certaine combinaison structurelle, qui cumule plusieurs contradictions, avec 2) un certain type d'organisation. Tout mouvement social provoque, de la part du système un contre-mouvement social qui n'est que l'expression d'une intervention du système politique (intégration-répression).

1) *Le cumul de contradictions* se fait par l'insertion des agents dans les places contradictoires à l'intérieur d'un même élément du système urbain, structure sociale ou organisation sociale ou d'éléments différents à l'intérieur d'une relation (par exemple: rôle de locataire ou propriétaire à l'intérieur de l'élément Consommation₁ (logement); ou Force de Travail / Non Travail à l'intérieur de la relation propriété, ou Force de Travail/Moyens de Production (C/P) à l'intérieur de la relation d'appropriation réelle).

On peut donner les règles suivantes:

Plus il y a de contradictions cumulées, plus il y a de charge sociale potentiellement mobilisatrice.

Plus les contradictions sont dans le système économique (ou sa spécification, le système urbain) ou dérivées de contradictions dans ce système, et plus elles sont importantes.

Au contraire plus elles sont purement politiques ou purement idéologiques et plus elles sont intégrables dans une régulation du système.

Plus les contradictions sont fractionnées dans leur traitement et moins il y a de chances pour l'affrontement et la mobilisation.

L'affrontement direct entre des pratiques fondées sur ces combinaisons structurelles dont l'opposition relève d'une contradiction fondamentale ne peut se résoudre que par une régulation du système ou une articulation avec une autre contradiction. Ainsi toute contradiction non résolue mais posée entre des éléments complémentaires et opposés, débouche sur une autre contradiction. L'enchaînement des contradictions (*manifesté par des modifications dans le système d'acteurs*) débouche sur le lieu de condensations des contradictions du système: *le système politique*.

Quand il y a non correspondance entre les éléments appropriés par les acteurs en présence, les contradictions ne peuvent s'exprimer qu'à travers l'articulation de ces éléments isolés dans d'autres champs de pratiques sociales.

L'articulation d'autres pratiques aux pratiques urbaines produit une augmentation de la contradiction quand elles sont définies sur des contradictions fondamentales et vice versa.

L'intervention de l'idéologie a une importance particulière au niveau des formes d'expression du mouvement; l'intervention du politique, au niveau de leur *contenu* historiquement donné; l'intervention économique, au niveau de leur *dynamique* (horizon structurel).

2) Le rôle de *l'organisation* (système de moyens spécifiques à un objectif) est fondamental car, si les acteurs-supports permettent la constitution de combinaisons entre les éléments structurels, c'est l'organisation qui est le lieu de fusion ou articulation avec les autres pratiques sociales. Quand il n'y a pas d'organisation, les contradictions urbaines s'expriment soit de manière réfractée, à travers d'autres pratiques, soit de manière „sauvage", pure contradiction vide d'horizon structurel.

La genèse de l'organisation ne relève pas de l'analyse des mouvements sociaux, car seuls ses effects sont importants. Elle est cristallisation de pratiques sociales et ses caractéristi.ues vont déterminer les conséquences qu'elle aura sur certaines combinaisons structurelles exprimées dans le système d'acteurs.

Une organisation se définit, structurellement, comme une intervention, à partir d'une certaine combinaison structurelle (exprimée par *un horizon d'appartenance* somme des combinaisons des acteurs à la base) sur une autre combinaison structurelle différente et qui l'intègre.

L'horizon de référence : somme des combinaisons des acteurs qui la composent si les objectifs de l'organisation sont réalisés).

Le rôle de l'organisation dans la formation d'un mouvement social est de *lier* les différentes contradictions présentes dans les combinaisons structurelles auxquelles elle a à faire. Le rôle de l'organisation pour détruire le mouvement social est de *délier* les contradictions qui le sont déjà.

D'autre part, l'organisation peut naître du système d'acteurs urbains ou être importée d'autres pratiques.

Hypothèse fondamentale: si l'organisation naît de simple mise en rapport des éléments contenus dans une partie du système d'acteurs urbains, elle ne change pas qualitativement l'orientation et assure uniquement l'action fractionnée déterminée par les différentes places. C'est le niveau Q, de l'organisation (coordination de la spontanéité) qui ne peut pas susciter un mouvement social. Donc pour qu'il y ait mouvement social il faut nécessairement l'union d'une enchaînement de contradictions en profondeur qui ne peut être fait que par une organisation importée d'autres pratiques. L'organisation uniquement "urbaine" ne peut être que, au maximum instrument de *réforme* (cf. notre typologie de pratiques urbaines).

Dans tous les autres cas, l'organisation, tout en intervenant dans le système d'acteurs urbains, a une origine extérieure et ne peut être que: (de par ses objectifs, définis en dehors du système urbain).

1. Instrument de domination   Instrument de
   Intégration   contestation
(courroie de transmission)
2. Contestation économique
3.   „   idéologique
4.   2+3   politique
5.   2+4
6.   3+4
7.   3+4
8.   2+3+4

L'organisation n'est pas de Deus ex Machina du mouvement social. Son explication échappe à une analyse spécifique de l'urbain (dans la mesure où elle est cristallisation d'autres pratiques). Mais la nouvelle organisation, spécifique au mouvement social urbain, est parfaitement analysable à partir de la fusion des caractéristiques de l'organisation „importée" et des combinaisons structurelles présentes dans le système d'acteurs. Il y aura mouvement social dans la mesure où la pratique et le discours de l'organisation lient les contradictions supportées par les acteurs, sans les délier de façon fractionnée (idéologie réformiste) et sans les fondre dans une seule opposition globulisante (utopie révolutionnariste).

Il y a mouvement social urbain quand il y a correspondance de contradictions structurelles fondamentales du système urbaine et d'une ligne juste à travers une organisation formée à partir de la cristallisation d'autres pratiques.

IV. LA MISE EN PRATIQUE DE LA RECHERCHE

S'il est parfaitement arbitraire d'aborder les problèmes méthodologiques sans avoir délimité au préalable un objet empiri ue, on peut tout au moins signaler le *style de travail*, afin d'initier le lien entre les préoccupations théoriques dont il a été question dans cette note et les résultats de recherche auxquels il faut aboutir.

D'abord, on peut déjà préciser par quoi il faut commencer dans l'étude des mouvements sociaux urbains. Ou, plus exactement, il *ne faut pas* commencer par là où on le fait d'habitude, *les organisations*. Il s'agit de repérer des contradictions ("problèmes") ou signaler ces mobilisations specifiques à ces problèmes. A partir de là, il faut:

Repérer l'enjeu (ou les enjeux) et les coder en termes structuraux.

Repérer les groupes sociaux intervenant par rapport à chaque enjeu et les coder dans les mêmes termes, à différents niveaux de profondeur, suivant le tableau.

Caractériser les organisations et déterminer leur articulation au système d'acteurs.

Ensuite, on procèdera à l'analyse concrète de la situation qui sera en même temps la démonstration d'une loi, dans la mesure où elle réalise cette loi en devenant intelligible à travers la mise en rapport des éléments réels soumis à notre codification théorique.

On devra surmonter les difficultés classiques dans la recherche quantitative, d'application de la méthode expérimentale à une situation non expérimentale. On partira donc de l'hypothèse de la fermeture du champ avec considération en tant que constantes de tous les éléments non compris dans chaque analyse spécifique. Il faudra ensuite trouver, au niveau qualitatif, l'équivalent des procédures de contrôle courantes dans la recherche quantitative.

La technique de vérification expérimentale qui semble la plus adéquate est celle d'un *modèle de simulation* qui fonctionnerait suivant deux règles opératoires fondamentales :

1. La vérification se fait suivant le schéma présence/absence et suivant la détermination de chaque enchaînement par une seule combinaison d'éléments.

2. La procédure de contrôle (analogue au coefficient de corrélation partiel) consiste à voir l'organisation différentielle des pratiques suivant le découpage distinct du système d'acteurs. (Par exemple, à l'intérieur des agents définis par leur appartenance à un bas niveau du rôle de locataire de C_1 (Logement), on découpe en ajoutant un autre critère, réfraction de la structure sociale au niveau du système économique (Employés, Ouvriers), et en comparant leur comportement par rapport à la pratique étudiée (par exemple, grève des loyers).

Normalement, puisque la situation n'est pas expérimentale et qu'il s'agit de pratiques et non pas de réponses à un questionnaire, il sera difficile d'obtenir l'ensemble des contrôles. Mais l'on disposera, au moins, de plusieurs systèmes de pratiques, correspondant à différents regroupements des mêmes acteurs et au traitement de problèmes divers. A partir de cette diversité de situation, on aura des éléments de comparaison, et donc d'explication, car on se rapproche fortement de situations de recherche familières au sociologue.

Si les problèmes techniques à résoudre restent énormes, la voie est ouverte pour leur position et, par conséquent, tendancieusement pour leur solution. Une voie qui nous semble, sur le plan théorique et sur le plan méthodologique, aussi féconde qu'inexplorée.

SOME CRITICAL CONSIDERATIONS ON THE OPERATIONAL ANALYSIS OF THE RELATIONSHIP "MANAGEMENT — PUBLIC RESPONSE" IN PROCESSES OF SOCIAL TRANSFORMATIONS

PAVEL APOSTOL

ROUMANIA

Clarence B. Randall notices with much justification the appearance and proliferation of a true *Folklore of Management*. This may be interpreted as a transposition, to the level of the common sense, of what we want to call *managerial ideology*. The term designates, in our contribution, a set of ideas expressed in a pseudotheoretical manner, and showing the mystified and mythicizing awareness of the managerial activity.

Mystification (and/or self-mystification) is merely the way one regards the managerial activity outside of its dependence with the systems laws of the society, as a whole: *mythicizing* lies in the trend to invest the efficiency-principles of managerial activity with a status of autonomous, hypostasized social forces.

The literature of the matter admits that concepts as "simulation", "engineering", "design behaviour of a practising engineer" a. s. o. "depend, for their elucidation" too, as stated by I. I. Mitroff,[1] "on a host of underlying philosophical concepts".

The sociology of scientifical knowledge, too, has emphasized the *impact* of philosophical options over the theoretical construction and even over the experimental "démarche"'s.[2] Thus, a. thinker as remote from Marxism as Philipp Frank explicitly adheres[3] to the thesis advanced by Fr. Engels in *Dialectics of Nature*[1]: scientists who highly denigrate philosophy are just the slaves of the worst vulgarized philosophical theories. Contrary to our interpretation, C. West Churchman[5] asserts the presence precisely of this determination within the simulation process

[1] I. I. Mitroff, Fundamental Issues in the Simulation of Human Behavior: A Case Study in the Strategy of Behavioral Science in Management Science, 16, 1969, 12, pp. 635 sqq.

[2] C. B. Barber, W. Hirsch (eds.), The Sociology of Science, New York, 1962, passim.

[3] Ph. Frank, The Philosophy of Science, New York, 1956.

[4] Fr. Engels, Dialectica naturii (Roumanian, in K. Marx, Fr. Engels, Opere, vol. 20, Bu charest, 1964, p. 508).

[5] C. West Churchman, An Analysis of the Concept of Simulation, in A. C. Hoggartand F. E. Balderston (eds.), Symposium on Simulation Models, Cincinnati, 1963.

By substituting $t-1$ for t in equation (4) we get:

$$X_{3, t-1} = (a_3 + b_{32}a_2) + b_{32}b_{21}X_{1, t-1} + (b_{32}u_{2, t-1} + u_{3, t-1}).$$ (3.5)

And by substituting this equation into (1) we get:

$$X_{1t} = a_1 + b_{13}\left[(a_3 + b_{32}a_2) + b_{32}b_{21}X_{1, t-1} + (b_{32}u_{2, t-1} + u_{3, t-1})\right] + u_{1t}$$

$$= (a_1b_{13}a_3 + b_{13}b_{32}a_2) + b_{13}b_{32}b_{21}X_{1, t-1} + (b_{13}b_3:u_{2, t-1} + b_{13}u_{3, t-1} + u_t),$$ (3.6)

which we may write as:

$$X_{1t} = A_1 + b_{13}b_{32}b_{21}X_{1, t-1} + (U_{1t} + U_{2, t-1} + U_{3, t-1}).$$ (3.6)

Thus in equation (6) we have expressed X_{1t} (the penal system) as a function of the penal system at time $t-1$, while a combined error-term for neglected variables is added.

Graphically we have a *loop:* a change in the penal system will eventually influence a future change in this system (a similar procedure might have been applied to penal policy), that is, a difference equation has been produced, for which the coefficient of $X_{1, t-1}$ has to be interpreted (a rather complicated practical problem which will not be considered in this context).

Once the penal system and the behavior defined as criminal are described mathematically, we have a fundamental predictions model, to which can be added the boundary conditions (or individual "causes" in traditional language) for which this selection works.

That is to say: for acts in cell I (see II.2) of our classification model, equation (6) will do, and the individual variable that have been neglected will go into U_i. For acts in cell 3 (a and b) the external or internal "unavoidability" will have to be accounted for either by U_i, or preferably by additional mathematical procedures. Of course cell I and cell II stand actually on both ends of a continuum. For acts in cell 2 and 4 the variables that lead eventually to the (subjective) interpretation of a certain act as belonging or not to the negative category of a given penal norm, should be accounted for by additional mathematical procedures.

II.4. Predictive models for crimes with subjective indicators

Selecting deviant acts which will be defined as criminal (the penal system) and deciding (e. g. in court) whether an only subjectively indictable act does belong to the set of behavior defined as criminal are of course two different processes. In the former case the time-lag made us choose a difference equation model. In the latter case the decision to interpret subjectively, for example whether or not certain publication will be defined as belonging to the pornographic category, is probably best seen as an optimalization problem. Judges (or magistrates in general) are confronted with two kinds of suspects: those with and those without a socio-economic and cultural status comparable to (or sympathetic to) that of the magistrates themselves. Further, they can choose either of two alternatives when confronted with an act which may or may not be subjectively classified as belonging to the category defined as criminal.

Lastly, they will not want to seem prejudiced, neither in their own opinion nor in that of the public (this goes especially for a democratic society; in an extremist kind of state prejudice may be honored under circumstances), so that they

will be psychologically inclined to introduce a random element into their inter-
pretation of acts for which no measurable or objectively observable indicators
are defined.

As a result, if all of these evidently time-continuous processes were linear,
we should have three linear regression equations, and the optimization would
be easily predictable. In reality, some or all three of these processes may be best
described as differential equations, and their interpretation may be difficult.

If magistrates showed no tendency to counterweight the predictability of their
decisions by introducing a random element, we could easily predict that if $X_1 =$ emo-
tional sympathy (on the basis of again subjectively interpreted indicators), $X_2 =$ deci-
sion to convict or not (primarily dependent on the result of the former decision,
though also on exogeneous variables), but X_1 among others dependent on former
decisions about X_2 (once convicted, one gets more easily convicted again) we have a
simple, semi-stable feedback-system, where only the randomization, incalculated
in the error-terms for X_2, and other exogeneous variables allow for dynamic
processes.

We could represent this system graphically as

Fig. 4

$$X_1 \quad \begin{array}{c} \pm \\ \longrightarrow \\ \longleftarrow \\ \mp \end{array} \quad X_2$$

If the decision for X_1 is positive, we will have a negative decision for X_2 and
vice versa.

Algebraically we would have two equations:

$$\frac{dX_1}{dt} = b_{11}X_1 + b_{12}X_2 \tag{4.1}$$

$$\frac{dX_2}{dt} = b_{21}X_1 + b_{22}X_2, \tag{4.2}$$

where b_{11} and b_{22}, or generally b_{ii}, are the feedback terms, and b_{12} and b_{21}, or gene
rally b_{ij}, represent the influence of the variables on each other.

We have but a qualitative indication of the situation so far, which, however,
might be substantiated by quantitative measurements. Already we know, on empi-
rical grounds, that the optimal decision for judges will imply randomization,
which by differentiating with respect to t has been lost from sight here.

We could allow for this randomization effect by implying that feedback from
X_1 to X_1 will eventually become negative, and so will feedback from X_2 to X_2.

II.5. Predictive models for unavoidable crimes

There is left for discussion the prediction of those crimes that are inevitable, either for reasons internal to the actor (e. g. compulsive acts) or for reasons external to him (the shortage of legal parking places can be taken as an example).

In the latter case, from the viewpoint of macro-prediction, we are confronted with a mathematically extremely simple, empirically probably very hard to quantify, subtraction. From the individual viewpoint with a probability function. In the former case the estimation techniques used up to now in prediction in applied criminology will be the right approach.

We take the behavior of a known delinquent for this type of criminality as our sample, and draw inferences about his future behavior in this field 'all other things being equal', or implying the same boundary conditions.

III. Conclusions

The integration (not in the technical sense) of the four mathematical approaches in II 3/4/5 should be our final aim. One should seek, however, the contribution of the above text to prediction in criminology not in the rough application of existing mathematical approaches to criminological situations, but in the attemps to shift the attention of empirical researchers from (fruitless) individual prediction that is based on current ideologies concerning the criminal as an exceptional human being towards more critical (fundamental) research.

UNE MÉTHODE DE MESURE DE LA STRUCTURE SOCIOLOGIQUE DE LA SOCIÉTÉ

JIVKO OCHAVKOV

BULGARIE

1

Le pronostic scientifique de la société humaine concrète en tant que système total, l'élaboration et surtout la réalisation d'un plan social correspondant ne deviennent possibles en principe et nécessaires objectivement qu'en présence d'une condition fondamentale — la collectivisation de tous les moyens de production. Cette condition fondamentale se crée dans la société humaine concrète de type socialiste après l'accomplissement du passage du capitalisme au socialisme. Dans la République Populaire de Bulgarie le passage du pronostic et de la planification de l'économie et des autres processus sociaux distincts au pronostic et à la planification de la société en tant que système total a commencé en 1968.[1]

Pour l'élaboration des pronostics et des plans de la société en tant que système total, il s'avère nécessaire de recueillir et d'analyser une information scientifique concrète sur la structure sociologique de la société, avant tout — sur sa structure sociologique fondamentale déployée. Les parties intégrantes de cette structure sont les domaines principaux de la vie sociale, notamment: les forces productives, les rapports de production, la politique, le droit, la science, la morale, l'art, la religion, le mode de vie, la santé publique, la culture physique, l'instruction, l'autodidactie, la langue, la presse et les autres moyens de communication. Chacun de ces domaines principaux de la vie sociale a sa structure spécifique. Pour l'étude concrète de la structure sociologique fondamentale déployée, il est indispensable de recueillir de l'information non pas sur toutes mais seulement sur les parties intégrantes les plus essentielles de la structure spécifique de chaque domaine principal distinct de la vie sociale; il s'agit de ces parties intégrantes, dont l'étude apportera une information suffisante sur l'état global du domaine principal respectif de la vie sociale.[2]

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[1] Voir Todor Jivkov, Orientations fondamentales du développement ultérieur du système de gestion de notre société, Sofia, Édition du Parti communiste bulgare, 1968.

[2] Sur les questions de la différence entre la prévision sociale et le pronostic social, de la structure sociologique de la société fondamentale (déployée et non-déployée) et régionnale, réelle et accumulée par les membres de la société, de la structure spécifique du domaine principal distinct de la vie sociale, de l'aspect sociologique du pronostic social, etc. Voir Jivko Ochavkov,

Mais on sait que les caractères, suivant lesquels l'information sociologique concrète est recueillie, dans leur plus grande partie ne sont pas qualifiés eux-mêmes, ou en d'autres termes, sont de nature qualitative. A ce propos des sociologues et des mathématiciens font des efforts depuis longtemps pour trouver les meilleurs moyens de transformation des caractères qualitatifs en caractères quantitatifs; jusqu'à présent on n'a proposé qu'une suite de méthodes destinées à élaborer différentes sortes d'échelles. Les méthodes d'élaboration d'échelles nominales et surtout d'échelles ordonnées représentent sans doute une réussite scientifique.

Mais pour l'élaboration des pronostics et des plans de la société en tant que système total les méthodes de transformation des caractères qualitatifs en caractères quantitatifs se révèlent insuffisantes. Il est nécessaire encore de trouver des méthodes convenables à la quantification de chaque domaine principal de la vie sociale considéré dans sa totalité.

Le présent rapport est consacré à la description mathématique d'une telle méthode. Il s'agit plus exactement d'une méthode d'élaboration d'une échelle combinatoire pour chacune des parties intégrantes de la structure sociologique fondamentale déployée, ayant pour point de départ les échelles ordonnées correspondantes.

Cette méthode a été tout d'abord appliquée lors de l'analyse d'une partie représentative des données de l'étude sociologique concrète de la religion en Bulgarie effectuée au cours de l'automne 1962. La même méthode est appliquée actuellement lors de l'analyse des données de l'étude sociologique de la ville et du village en Bulgarie effectuée au cours de la période décembre — avril 1967—1968; cette étude a embrassé presque toutes les parties intégrantes de la structure sociologique fondamentale déployée de notre société.

*

L'élaboration d'une échelle combinatoire pour la totalité d'une partie intégrante donnée de la structure sociologique fondamentale déployée de la société d'après la méthode proposée, s'effectue de la manière suivante:

a) parmi toutes les échelles ordonnées se rapportant à la partie intégrante donnée, on choisit celles, qui, à un degré suffisant, expriment son essence;

b) les subdivisions de toutes les échelles ordonnées se rangent suivant leur signification dans une direction unique — par exemple en sens décroissant;

c) les échelles ordonnées elles-mêmes se rangent sur la même direction;

d) toutes les subdivisions de toutes les échelles ordonnées se rapportant à la partie intégrante donnée et rangée de la façon indiquée sont combinées mathématiquement entre elles dans un ordre successif défini;

e) dans le cas où quelques-unes ou toutes les échelles ordonnées ont des subdivisions non seulement de valeur positive mais de valeur positive et négative, la combinaison des subdivisions de valeur positive est effectuée tout d'abord et ensuite sont incluses dans la combinaison selon un ordre successif défini des subdivisions de valeur négative.

La sociologie et le pronostic social, dans les Actes du Septième congrès mondial de Sociologie, vol. I, Sofia, 1970.

Le choix des échelles ordonnées, leur rangement, ainsi que le rangement des subdivisions de chaque échelle ordonnée, selon le procédé indiqué plus haut, s'effectuent uniquement suivant leur importance pour la partie intégrante donnée. Ceci dit, le nombre des échelles ordonnées pour les différentes parties intégrantes de la structure sociologique fondamentale déployée ainsi que le nombre des subdivisions des échelles ordonnées peut être différent.

Le rangement des échelles ordonnées se rapportant à une partie intégrante donnée de la structure sociologique, et des subdivisions de ces échelles ordonnées dans l'ordre décroissant peut être présenté de la manière suivante:

$$
\begin{array}{cccc}
Q_1 & Q_2 & Q_{n-1} & Q_n \\
1 & 1 & 1 & 1 \\
2 & 2 & 2 & 2 \\
\cdot & \cdot & \cdot & \cdot \\
\cdot & \cdot & \cdot & \cdot \\
\cdot & \cdot & \cdot & \cdot \\
p_1 & p_2 & p_{n-1} & p_n
\end{array}
$$

Chaque combinaison des subdivisions de toutes les échelles ordonnées peut être exprimée par $(k_1, k_2 \ldots, k_{n-1}, k_n)$, k_1 marquant n'importe quelle subdivision de Q_1, k_2 — n'importe quelle subdivision de Q_2, etc.

Etant donné que les échelles ordonnées et leurs subdivisions sont rangées dans l'ordre décroissant, toutes les combinaisons $(k_1 \ldots, k_n)$ pour la partie intégrante donnée sont rangées dans le même ordre. La combinaison des premières subdivisions de tous les Q, c'est-à-dire $(k_1 = 1, k_2 = 1, \ldots, k_{n-1} = 1. k_n = 1)$ vient en tête; ensuite viennent la combinaison formée par les premières subdivisions de Q_1, Q_2, ..., Q_{n-1} et la deuxième subdivision de Q_n, c.-à-d. $(k_1 = 1, k_2 = 1, \ldots, k_{n-1} = 1, k_n = 2)$.

Le nombre de toutes les combinaisons $(k_1, \ldots, k_n)$ ou bien $C_p^n = p_1 . p_2 \ldots p_{n-1} \cdot p_n$.

Prenons par exemple trois échelles ordonnées, chacune à trois subdivisions où (a) les trois subdivisions des trois échelles sont de valeur positive ou bien (b) les deux premières subdivisions des trois échelles ordonnées sont de valeur positive tandis que la troisième subdivision a une valeur négative, notamment:

	(a)			(b)	
Q_1	Q_2	Q_3	Q_1	Q_2	Q_3
1+	1+	1+	1+	1+	1+
2+	2+	2+	2+	2+	2+
3+	3+	3+	3−	3−	3−

Il est évident qu'aussi bien pour (a) que pour (b) le nombre de toutes les combinaisons $(k_1, \ldots, k_n)$ sera le même, c'est-à-dire $C_p^n (a) = C_p^n (b) = 3.3.3 = 27$. Ces combinaisons se rangent respectivement, comme suit:

(a)	N	(b)	
111	1	111	
112	2	112	
113	3	121	
121	4	122	
122	5	211	I
123	6	212	
131	7	221	
132	8	222	

133	9	113	
211	10	123	
212	11	213	II
213	12	223	
221	13	131	
222	14	132	
223	15	133	III
231	16	231	
232	17	232	
233	18	233	
311	19	311	
.	.	.	IV
.	.	.	
332	26	332	
333	27	333	

La colonne centrale $(1, 2, \ldots, 26, 27)$ indique le numéro d'ordre des combinaisons (a) et (b) dans l'ordre décroissant.

Pour (a) : $p_1^+ = 3$, $p_2^+ = 3$, $p_3^+ = 3$. Dans ce cas chaque subdivision de la première échelle ordonnée est combinée dans un ordre décroissant successif avec chaque subdivision des deux autres échelles ordonnées.

Pour (b) : $p_1^+ = 2$, $p_2^+ = 2$, $p_3^+ = 2$ et $p_1^- = 1$, $p_2^- = 1$, $p_3^- = 1$. Dans ce cas sont combinées dans un ordre décroissant successif tout d'abord les subdivisions à valeur positive des trois échelles et on reçoit 8 combinaisons:
$I\ C_p^n = p_1^+ \cdot p_2^+ \cdot p_3^+ = 2.2.2 = 8.$

Ensuite la subdivision de valeur négative de Q_3 se combine avec les deux subdivisions de valeur positive de Q_1 et de Q_2 et on reçoit 4 combinaisons: $II\ C_p^n = p_1^+ \cdot p_2^+ \cdot p_3^- = 2.2.1 = 4.$

Puis la subdivision de valeur négative de Q_1 se combine avec les trois subdivisions de Q_3 et avec les deux subdivisions de valeur positive de Q_1 et on reçoit 6 combinaisons:
$III\ C_p^n = p_1^+ \cdot p_2^- \cdot (p_3^+ + p_3^-) = 2.1.3 = 6.$

Ensuite la subdivision de valeur négative de Q_1 se combine avec les trois subdivisions de Q_2 et de Q_3 et on reçoit 9 combinaisons: $IV\ C_p^n = p_1^- \cdot (p_2^+ + p_2^-) \cdot (p_3^+ + p_3^-) = 1.3.3 = 9.$

Par conséquent $C_p^n\ (b) = I\ C_p^n + II\ C_p^n + III\ C_p^n + IV\ C_p^n = 8 + 4 + 6 + 9 = 27.$

Si toutes ou quelques-unes des échelles ordonnées ont deux ou plusieurs subdivisions de valeur négative, on procède de la même façon; tout d'abord on combine toutes les subdivisions de valeur positive de toutes les échelles ordonnées; ensuite on effectue une combinaison de toutes les subdivisions de valeur négative de Q_n avec toutes les subdivisions de valeur positive de Q_1, $Q_2, \ldots Q_{n-1}$, etc.

A partir des données de l'étude sociologique de la religion on a élaboré l'échelle (b) pour mesurer l'autodidactie. Lors de cette étude l'autodidactie des personnes a été étudiée à partir de trois parties intégrantes de sa structure spécifique — lecture de la littérature scientifique, lecture d'oeuvres littéraires et lecture des journaux. Pour chacune de ces trois parties intégrantes on a élaboré une échelle ordonnée à trois subdivisions d'ordre décroissant:

Q_1 Q_2 Q_3
1^+ 1^+ 1^+ = lit régulièrement
$2^\pm$ 2^+ 2^+ = lit irrégulièrement
3^- 3^- 3^- = ne lit pas

Ces trois échelles ordonnées ayant été aussi rangées dans un ordre décroissant: les spécialistes ont pu conclure que la lecture de la littérature scientifique (Q_1) est la plus profitable à l'autodidacte, suivie par la lecture des journaux (Q_2), la lecture des oeuvres littéraires venant en troisième lieu.

3

Dans certains cas la combinaison s'effectue de façon plus compliquée. Par exemple lors de l'élaboration d'une échelle combinatoire de la religiosité des personnes étudiées.

A partir des données de notre étude sur la religiosité (1962), trois échelles ordonnées ont été élaborées dans l'ordre décroissant suivant: Q_1— présence et degré de consience religieuse ou non-religieuse, Q_2— assistance à la messe, Q_3— manifestations religieuses et non-religieuses dans le mode de vie (lors de la naissance, du mariage, de l'enterrement).

Les subdivisions de Q_1 dans l'ordre décroissant sont les suivantes:

1^+ consience non-religieuse jusqu'à 1945;

2^+ conscience non-religieuse après 1945;

3^- religiosité du III-ème degré, c.-à-d. conscience religieuse très faible, presque uniquement psychologique;

4^- religiosité du II-ème degré, c.-à-d. conscience religieuse moyenne plutôt psychologique qu'idéologique;

5^- religiosité du I-er degré, c.-à-d. conscience religieuse très forte idéologique et psychologique.

Par conséquent: $p_1^+ = 2$, $p_1^- = 3$.

Les subdivisions de Q_2 dans l'ordre décroissant sont:

1^+ non-assistance à la messe;

2^- assistance irrégulière;

3^- assistance régulière.

Par conséquent: $p_2^+ = 1$; $p_2^- = 2$.

Les subdivisions de Q_3 dans l'ordre décroissant sont:

1^+ après 1945 le nombre des manifestations non-religieuses correspond au nombre des événements vécus (naissance, mariage, enterrement);

2^- deux manifestations non-religieuses et une religieuse;

3^- une manifestation non-religieuse et une religieuse, le troisième événement n'étant pas vécu; ou aucune des trois événements n'étant vécu;

4^- deux manifestations religieuses et une non-religieuse;

5^- le nombre des manifestations religieuses correspond au nombre des événements vécus.

Par conséquent: $p_3^+ = 1$; $p_3^- = 4$.

Ici par définition les personnes qui n'ont pas de conscience religieuse, n'assistent pas à la messe lors des jours de fête ordinaires, ni régulièrement, ni irrégulièrement; les personnes religieuses du III-ème et du II-ème degré ou bien n'assi-

stent pas ou bien assistent irrégulièrement à la messe; les personnes religieuses du I-er degré ou bien n'assistent pas ou bien assistent irréguilièrement à la messe; enfin toutes les personnes — les non-religieuses et les religieuses de III-ème, du II-ème et du I-er degré — peuvent avoir des manifestations religieuses et non-religieuses exprimées dans les subdivisions de Q_3. Voilà pourquoi la combinaison ici se réalise par le principe de la même manière comme pour (b), mais d'abord — la combinaison des deux premières subdivisions de Q_1 avec la première subdivision de Q_2 et avec toutes les subdivisions de Q_3: $I\ C_p^n = p_1^+ \cdot p_2^+ \cdot (p_3^+ + p_3^-) = 2.1.5 = 10$; ensuite la troisième et la quatrième subdivisions de Q_1 se combinent avec la première et la deuxième subdivisions de Q_2 et avec toutes les subdivisions de Q_3: $II C_p^n = (p_1^- - 1) \cdot (p_2^+ + p_2^- - 1) \cdot (p_3^+ + p_3^-) = 2.2.5 = 20$; enfin, la cinquième subdivision de Q_3 se combine avec toutes les subdivisions de Q_2 et de Q_3: $III\ C_p^n = (p_2^- - 2) \cdot (p_2^+ + p_2^-) \cdot (p_3^+ + p_3^-) = 1.3.5 = 15$.

De cette façon on a obtenu une échelle combinatoire à 45 subdivisions de la religiosité des personnes étudiées.

<div align="center">4</div>

Quand l'échelle combinatoire s'élabore manuellement, il est nécessaire de constituer la liste de toutes les combinaisons dans un ordre défini successif et de marquer leur numéro d'ordre, comme il a été fait pour (a) et pour (b). Ensuite les données du questionnaire pour chaque personne étudiée sont portées sur un tableau conformément aux subdivisions de chaque échelle combinatoire et se transmettent ainsi pour la réaliation d'une analyse de régression, de corrélation ou autre sur calculateur électronique. C'est de cette façon que nous avons procédé lors de l'analyse des données de l'étude sociologique de la religion.

Mais cela est possible pour un nombre limité de personnes et pour un nombre restreint d'échelles combinatoires à peu de subdivisions. Ces limitations ne comptent pas si l'élaboration des échelles combinatoires est effectuée sur calculateur électronique. Dans ce cas il n'est pas nécessaire que le calculateur électronique constitue et conserve dans sa mémoire la liste de toutes les combinaisons de chaque échelle et indique leurs numéros d'ordre respectifs. L'information sur chaque personne est passée sur calculateur électronique selon les subdivisions des échelles ordonnées. Le calculateur électronique détermine la place de chaque personne sur chacune des .échelles ordonnées servant à l'élaboration d'une échelle combinatoire donnée; ensuite à partir du nombre obtenu, signifiant quelque combinaison $(k_1, ..., k_n)$, le calculateur électronique au moyen de calculs correspondants, trouve directement le numéro d'ordre de cette combinaison. Ce calcul peut s'effectuer d'après la formule suivante:
$C(k_1, ..., k_n) = [(k_1 \cdot p_2 + k_2)...p_{n-1} + k_{n-1}] \cdot p_n + k_n + 1$ où la valeur numérale de chaque „k" doit être diminuée préalablement par une unité, c.-à-d.: $k_1 - 1$, $k_2 - 1, ..., k_{n-1} - 1, k_n - 1$.[3]).

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[3] Le même calcul peut s'effectuer d'une autre manière — voir: D i m i t a r   P e n k o v, Descriptions mathématiques d'une méthode de l'élaboration d'échelle, Bul. «Études sociologiques», No. 4, 1968.

Par exemple le numéro d'ordre de la combinaison (131) de la liste (a) s'obtient de la manière suivante:

$k_1 = 1 - 1 = 0; \quad k_2 = 3 - 1 = 2; \quad k_3 = 1 - 1 = 0;$

$C_{(131)} = (0 \cdot 3 + 2) \cdot 3 + 0 + 1 = 6 + 1 = 7.$

Il est plus compliqué de trouver le numéro d'ordre de cette même combinaison (131) de la liste (b).

On calcule tout d'abord le nombre des combinaisons de toutes les subdivisions de valeur positive des trois échelles ordonnées; I $C_p = p_1^+ + p_2^+ \cdot p_3^+ = 2.2.2 = 8$; ensuite on calcule le nombre des combinaisons de valeur positive de Q_1 et Q_2 avec les subdivisions de valeur négative de Q_3:

II $C_p^n = p_1^+ \cdot p_2^+ \cdot p_3^- = 2.2.1 = 4$; ensuite on trouve le numéro d'ordre de $C_{(131)}$ dans III C_p^n:

$k_1 = 1 - 1 = 0; \quad k_2 = 1 - 1 = 0; \quad k_3 = 1 - 1 = 0;$

III $C_p = (0 \cdot p_2^- + 0) \cdot p_3^+ + k_3 + 1 = 0 + 1 = 1$;

$C_{(131)} = 8 + 4 + 1 = 13.$

C'est de cette façon à présent qu'un calculateur électronique détermine la place de chacune des 18 994 personnes, embrassées par l'étude sociologique de la ville et du village sur 22 échelles combinatoires. Mais les résultats ne sont pas encore obtenus.

La méthode proposée a été appliquée avec succès lors de l'analyse des données de l'étude sociologique de la religion. Nous espérons que son application à l'analyse des données de l'étude de la ville et du villsge réussira aussi.

IV. POWER AND THE PUBLIC

IV. POUVOIR ET PUBLIC

SOME NOTES ON THE POSSIBILITIES OF POLITICAL INTERVENTION OF THE ITALIAN STATE BUREAUCRACY*

FRANCO FERRARESI

ITALY

1. THE PROBLEM

Among the various aspects of the bureaucratic phenomenon one has always attracted the attention of scholars and social analysts, and that is bureaucracy's political role. Opinions on this vary between two opposite evaluations. Some observers accuse bureaucracy of wielding too much power, and of thus dispossessing the legitimate political authorities; others maintain that bureaucracy is too pliable to the desires, not always lawful, of politicians and pressure groups.

This divergence of opinions reflects a real variability in bureaucratic behavior, caused by a basic ambivalence of bureaucracy as a social structure: on the one hand, in order to perform efficiently its functions, bureaucracy needs a certain degree of autonomy. In other words, it must be able to apply objectively and without interference the technical norms which regulate its behavior. On the other hand, this very autonomy can make bureaucracy a power center, thus enabling it to bypass the constitutional organs and bodies which carry the formal responsibility for political decision-making. The purpose of this paper is to offer some suggestions for assessing the position of the state bureaucracy in Italian political life, within the framework of this debate.

2. COMPARATIVE FRAMEWORK

A bureaucratic structure's amount of political power depends on a series of factors which must be preliminarily singled out, in order to orient correctly any factual analysis.

The first object of inquiry is the political system within which bureaucracy operates : the main problem concerns the distribution of power therein (whether, for example, it is more or less centralized), and especially the existence of power vacuums where bodies such as bureaucracy may step in.

Somewhat more detailed are the variables which need to be examined with regard to bureaucracy itself, beginning with the available *facilities*, both those of juridical-instrumental (such as legislation) and those of personal type. Concerning the latter, the employees' orientations and identifications, their interpretation of institutional tasks, and particularly, their attitute towards the management of political power need close scrutiny. These orientations are influenced by such factors as the personnel's socio-economic background, their professional characteristics (skill, autonomy, *esprit de corps*, etc.), which, in their turn, depend very much on the agencies, structures and procedures through which bureaucracy performs its socializing and incentivating functions.

Other relevant factors are connected with structural and organizational features: modes of the distribution of labor, patterns of the centralization of authority, etc.

All these variables, whose reciprocal interaction is obviously much more complex than in the above sketch, must be interpreted in the light of bureaucratic structure's history and tradition. On these premises, it is now possible to attempt an analysis of the Italian situation, beginning with a rapid overview of the general political system.

3. THE ITALIAN POLITICAL SYSTEM

Most observers agree on the significance of two of the system's main features. The first is a general condition of deep ideological fragmentation which appears at all levels of the polity. The second is the poor division of labor existing between some of the most important functional structures of the polity, such as interest groups and political parties. This appears in the competition existing between parties and interest groups concerning the transmission of the same kind of political demands. Political parties do not perform an aggregative function on the specific requests articulated by interest groups, since they are themselves channels for the transmission of specific, particularistic political interests.

In such a context, political decisions very often take the form of private, more or less open deals between parties and representatives of the various interests. It is difficult to single out, among such forces, a precise power hierarchy, or to identify actually ruling groups. What seems to happen is that most of the moderate-conservative groups having some consistence are able to satisfy, to some degree, their specific needs, and, at the least, to prevent damaging decisions against themselves : one could speak, for this reason, of veto-groups. This state of affairs, coupled with the governments' weakness and instability (which is one of its effects) seriously reduces the possibility of introducing system-wide structural reforms.

Two elements of the situation thus described must be underlined, in order to evaluate what possibilities bureaucracy has of acquiring "undue" political power. In the first place, the weakness of the political institutions creates a wide space for the intervention of outside forces, such as bureaucracy. On the other hand, this very weakness of political authority leaves bureaucracy, without protection *vis à vis* the pressures coming from interest groups. This means that, if for internal reasons bureaucracy cannot acquire a politically dominating position, in order to achieve its objectives it will have to play the pressure groups game. This will bear important consequences for bureaucracy's action, in terms of the ends attainable, the alliances permissible, the strategies available, etc.

4. BUREAUCRACY

It is now necessary to turn our attention to the specific features of Italian bureaucracy, in order to estimate its possibilities of stepping into the power vacuums which have just been described.

The analysis will begin with a brief history of Italian administration.

A) History

Until 1848 most Italian states were run as the private property of their sovereigns (patrimonialism). It is not possible, therefore, to talk about *public* employment for this period, as the bureaucrats were the king's *private* employees.

The emergence of the "State of Law" as a product of nineteenth century liberalism brought about a conception of the state as the custodian and protector of all citizens' rights that had many effects on public employment, only two of which can be mentioned here. In the first place the employees ceased being the sovereign's private servants and became, at least theoretically, subject to the law. In the second place, the view of the state's tasks which emphasized its guarantee and control functions required a civil service made up by employees with a prevalently juridical education.

The employees' theoretical subjection to the law (as opposed to the will of the master) had, at the beginning a very limited effect on their *de facto* conditions: no specific provisions regulating their status were immediately approved. Consequently, although in Italy no spoils system was ever explicitly codified, for many decades the employees had practically no protection against dismissals, and arbitrary measures in general by their political superiors. Only in 1908, the Parliament approved a general statute regulating, however, illiberally, the status of public employees.

The following period coincided with the long dominance of Italian political life by G. Giolitti and is by many considered as the golden age of Italian bureaucracy. Giolitti had been himself a high civil servant and understood the workings of bureaucracy as few politicians did before or after him. This, in a sense, turned out to be also a mixed blessing: Giolitti was extremely skilful in plying bureaucracy to his needs.

In any case this relatively favorable period came to an end when fascism took over the state. Bureaucracy was then radically and formally subjected to political rule and lost even some of the juridical guarantees it had acquired during the

preceding years: we need only to mention facts like compulsory party membership for employees, the possibility of dismissing functionaries because of their political dissent, and so forth. Besides this, fascism frequently committed disruptive actions, like mass recruitment of employees for political reasons, alterations of the merit classifications, etc.

It is easy to see, then, that during the 75 years period between the country's unification and the end of World War II, Italian bureaucracy enjoyed a very short time of "glory", and even this was not without sharp limitations.

The political and social evolution which has taken place after the war has not altered in any significant way the administration's power position. Bureaucracy is still weak in an "objective" sense, while, "subjectively", its members lack the aggressive spirit which would permit strong political interventions. We shall now turn our attention to factors which contribute to determine such a situation.

B) *Facilities*

The facilities available to bureaucracy for carrying out its functions also have an obvious effect on its possibilities of acquiring political power. First among them is the *legislative* framework which regulates the administration's fields and modes of intervention.

As a consequence of the above mentioned inefficiency of the highest decision-making bodies, the laws framing administrative actions are in Italy extremely archaic. The basic norms are still those laid down in the Administrative Unification Statutes of 1865; statutes which, in many respects, could be considered even for those times largely inadequate.

Since then no attempt at a general reform has been successful, while additions and amendments to single provisions are multitudinous. More serious than the technical inadequacies are, perhaps, the difficulties caused by the philosophy inspiring administrative legislation. The principles prevailing are still those of nineteenth century liberalism, according to which, as was said above, the state's main tasks are those of guaranteeing the conditions for the enjoyment of citizens' rights, while direct intervention powers are rather limited. In recent years, under the mounting pressure of social and economic needs, there has been a marked expansion of the state's socio-economic interventions: yet the administration's powers remain largely control powers, while direct initiative possibilities are relatively few.

Another consequence of such a philosophy has been mentioned above and concerns that important "facility" for administrative action whis is personnel, seen in its professional capacity. Since its beginning, Italian bureaucracy has been prevalently staffed with juridically trained employees: in 1961, the employees with a College (*Università*) degree were, in the State's administration, around 26,000, about 50% of which had law degrees. Although more recent information is lacking, it is fair to say that this state of affairs has worsened, since the administration's diminishing competitivity on the labor market has further reduced its ability to recruit technically trained personnel. This is true not only in "traditional" technical fields such as chemistry, engineering, geology etc., but also for "newer" sectors like statistics, urban planning, sociology and so forth, all disciplines which haven't yet gained admission to the state's administration.

The facilities available to the Italian state bureaucracy in the legislative, in the personal or in the strictly instrumental sector, therefore, are gravely inadequate for the necessities of a modern country. The effect can be only a serious limitation on bureaucracy's possibilities of acting in the social, political and economic fields.

C) *The bureaucrats and the structure's influence on their orientations*

C1) Social and geographical origin

Some of the professional features of the members of Italian bureaucracy have already been mentioned. It is now necessary to observe more closely other characteristics, beginning with that of social and geographical origin. It is well known that a large majority of employees are middle to lower-middle class southerners. More precisely, in 1961 about 63% of the *Carriera Direttiva* functionaries were born in the South and on the Islands. Sociologists estimate that between 65% and 75% of the total come from middle to lower-middle class families. This shows a remarkable degree of social and geographical homogeneity among the state's functionaries. The specific features of this homogeneity indicate that Italian administration, even at the higher levels, is not staffed with members of the ruling, or at least upper classes, traditionally oriented to managing public affairs, as, for example, is partly the case for French and British bureaucracy. On the contrary, in Italy, public employment, even at the upper echelons, is sought after especially in the underdeveloped areas, and by members of relatively deprived classes. On these grounds alone it would be easy to draw the inference that in Italy public employment is considered by those who enter it, mainly, as a means of solving their economic problems in a labor market characterized by a great deal of unemployment. The impression is confirmed by an analysis of the motivations of the functionaries studied during ISAP's research: about 62% of those interviewed declared that they had chosen public employment out of economic considerations (including security); if one adds career motivations the total reaches 74% of the sample. Only 3.5% of the functionaries were motivated by political reasons, and a similar percentage by family traditions; prestige was mentioned only by 2% of those interviewed.

C2) Integration mechanisms

These motivations can hardly be considered as the starting point for a group aggressively striving for political power. Yet it is theoretically possible for bureaucracy to act on its members' personalities so as to create among them cohesion, institutional loyalty, and *esprit de corps* strong enough to allow for aggressive political actions. It is then necessary to ask how Italian bureaucracy operates on its personnel.

We can begin by noting that Italian bureaucracy cannot count on one of the instruments most effective for building *ésprit de corps*: namely, professional schools comparable, for example, to France's *Grandes Ecoles*. (Caserta's *Scuola Superiore di Amministrazione* has little or no effect in this direction, being basically a technical re-training school, whose courses don't last more than few weeks.)

Concerning *recruitment*, the present procedures in accordance with nineteenth-century principles are especially designed to grant equal chances of admission to all applicants, while the instruments which should evaluate the future functionary's skills are, consequently, very general, consisting mainly of traditional-type examinations. These can, at the most, measure some theoretical notions, but are hardly suitable for a thorough assessment of the applicant's abilities. Lacking effective selection criteria, much recruitment takes place outside formal rules: between 1956 and 1961 about 32% of all *Carriera Direttiva* functionaries have been recruited without public examinations. Less evident, but perhaps more significant, is the fact that this situation of normlessness grants a large amount of discretionary, if not arbitrary powers to the examiners, thus opening the way to heterodox evaluation criteria.

Something similar happens in the *incentives* sector, most important among which are career patterns. Here also, since functional differences have no juridical sanction, the principal way of rewarding functionaries is to promote them to a higher rank, in a strictly hierarchical ladder. Often no real change of tasks takes place after promotion, so that the latter determines only a salary increase. (On the other hand, salary raises can be granted only by promotion, hence many more promotions than would be justified.)

The main problem, however, concerns advancement procedures, basically reduced to three: seniority, evaluation by superiors, and examinations. Leaving aside seniority, both other techniques are inadequate. The exams are, as usually, too far removed from daily administrative tasks, while evaluations are theoretically based on yearly reports which are practically useless since by long tradition, almost all functionaries obtain on them the highest ranking. Here again there is a wide discretionary margin for higher officers, and consequently many are the possibilities of outside interventions.

It is interesting to note that even in such a theoretically objective sector as *salaries* the same dynamics prevails. The apparent salaries are, especially at the lower echelons, undoubtedly low. There are, however, many fringe benefits of more or less mysterious origin which, especially at the higher levels, can go as far as doubling or tripling the official figure. Yet these benefits are mostly hidden, and the criteria of their allocation remain vague and cloudy.

In all these key sectors, then, a similar pattern takes shape. Formal rules and procedures are inadequate because they have been drawn up according to archaic and disfunctional principles. Daily practice by-passes or circumvents them, thus opening the way to arbitrary interventions on the part of higher ranking officers; through these or directly, pressure groups and politicians can also intervene.

It is not surprising that the functionaries are very critical of this situation: about 52% of our sample think that recruitment procedures are not, or are not always objective, while 62% of them think they are not effective in selecting the best candidates. About as strong are the opinions concerning advancement patterns: around 60% of those interviewed do not think that the best employees have a chance of getting ahead, 27% are uncertain, and only 12.2% are satisfied. In other words, by far the largest majority of functionaries do not believe that, in Italian bureaucracy, the best qualified reach top positions. (It is interesting to compare these attitudes with those, prevailing in other contexts: in a recent survey of British administration N. Walker found that 19.4% of those interviewed thought that the pro-

motion system worked, at their level, "as fairly as possible"; 46.3% that it worked "fairly on the whole"; 24.4% "a little unfairly", and only 9.9% "very unfairly".)

This general situation creates, within Italian bureaucracy, a deep sense of unpredictability and uncertainty concerning each individual's professional future, which, together with the possibilities of unfair competition is far from conducive to group solidarity and *esprit de corps*. Indeed it determines a general climate of resignation towards outside interventions which is exactly the opposite of what should be present, were bureaucracy to start aggressive policies.

A similar situation prevails in another important incentive sector, that connected with the rational use and allocation of personnel with regard to their responsibilities. The structure of authority within the bureaucracy is strongly centralized (although real power is somewhat more dispersed) so that at the lower levels of the *Carriera Direttiva* the tasks are often extremely menial, and in any case much below a college graduate's capabilities. More generally, as a consequence of the shortcomings in the patterns of division of labor and of promotion, personnel is frequently allocated to different tasks without any apparent rationality. So it happens that employees who have been promoted without there being any real need for them at the upper level, remain practically "unemployed", whereas others perform tasks above their formal status, but without the "honors" that go with them, hence with strong feelings of exploitation.

A last factor can be mentioned in passing, and that is the low *prestige* which bureaucracy nowadays enjoys in Italian society, especially in its most industrialized sectors. The bureaucrats are acutely aware of this attitude (as is proved, for example, by the data on initial motivations, where prestige is rarely mentioned) and this adds to their general feeling of bitterness and powerlessness.

This general situation (which, needless to say, has some exceptions, in a few, very cohesive sectors, like the Ministry of the Interior) has clear repercussions on the *perception bureaucrats have of their work*, to which we shall now briefly turn our attention.

C3) The bureaucrats' orientations

In the course of ISAP's survey, the bureaucrats were interviewed on the general conception they have of administration as a job, or, in other words, on the subjective meaning such a job has for them. There were three questions, concerning: a) their initial motivations; b) the most important criteria by which their work experience can be evaluated; and, c) job satisfactions. In all three cases there was the possibility to answer in a *political* sense. The concept used of "political" was very wide: it included, on the one hand, the subject's capability to perceive the public purpose of his activity ("public service"); on the other, attitudes indicating "desire for power".

In spite of the notion's width, the percentage of those indicating "political" orientation was very low. We saw above how small the number of functionaries choosing public employment out of "political" reasons is. Even fewer are the employees using "political" criteria when they evaluate in a comprehensive way their work experience (4 out of 256). There is, however, a marked increase in "political" answers concerning work satisfactions, which reach about 25% of the total. The last finding needs two qualifications: in the first place,

satisfactions involve an employee's personality less deeply than the other two sectors mentioned above. In the second place, only about 3.5% of these "political" satisfactions can be considered "power" satisfactions. (It might also be added that one of the two ministries studied in our research — that of the Interior — is by far the most politicized in the whole administration, so the figures are probably above the general administration's average.)

The amount of "political" orientations, then, is rather low; at this point, it is interesting to know what their content is. Most observers tend to underline its *defensive* character, and our observations confirm this image. Typical, in this sense, are the following words of a prefect we interviewed: *Our function is more and more declining. . . First of all, we lack a strong government, of which we should be the secular arm. Then we miss all connected powers. We play somewhat on tradition and what is left of prestige: but if somebody is willing to take advantage of it, like for instance the communists, then we are on the verge of chaos. The main satisfaction is that we contribute to delaying ruin. The curve, no doubt, is going down, and the prefect tries to keep the balance, postponing and delaying problems so that they get solved by themselves.*

These words can be taken as a summary of the present ideology of large sectors of Italian bureuacracy. The inadequate facilities available to bureaucracy, together with structural conditions which hinder the personnel's solidarity and frustrate its morale, oppose the emergence of outwardly aggressive attitudes among the functionaries. Moreover, traditional bureaucratic ideology sees the bureaucrat's function especially in terms of guaranteeing and defending legality, hence the Law, hence the State. Such an ideology acquires markedly defensive overtones in a context where the weakness of the state's institutions (of which the bureaucrats are only too willing to see the subjective reflection in their own class's loss of social prestige), together cause and effect of the growing aggressiveness of political parties and pressure groups, generates the impression that the state is disintegrating.

CONCLUSION: POLITICS AND ADMINISTRATION IN ITALY

The picture which we have drawn so far has laid heavy emphasis on bureaucracy's weak points. In order not to overestimate their importance and their effects on Italian political life, it is necessary to recall the context within which bureaucracy acts. This context is characterized by a general weakness of the state's institutions, which contrasts with a strong, aggressive presence of political parties and pressure groups. Bureaucracy, then, is the object of pressures coming from all directions, against which it can hardly be defended by political authority, which itself has become a pressure group. Yet this very situation allows even a weak bureaucracy like the Italian one to fight, politically, for its own interests and for those of the groups with which it identifies most closely.

Since, however, bureaucracy is not strong enough to exercise power directly, as a dominating factor of Italian political life, its interventions having general political scope (hence, for example, not simple conflicts over working conditions), carry, by and large, negative connotations: their aim is to prevent, rather than to promote, to delay some initiatives, rather than to urge others. In order to assess bureaucracy's possibilities in this context it is necessary to keep in mind the strategic position that public administration enjoys in a modern state, and which al-

lows it to intervene in most important moments of public life. This institutional position, together with bureaucracy's general weaknesses, conditions its strategic possibilities, compelling it to play on a relatively fixed *tableau*.

We can now try to see what shape bureaucracy's intervention can take concretely. Let us imagine that bureaucracy is hostile to a project or program not yet transformed in authoritative policy (probably the most frequent situation). Without pretending to exhaust all possibilities, we can think, by way of example, of the following steps in bureaucracy's action. In the first place bureaucracy tries to set up an alliance with other forces opposing the project, and, working especially through them, tries to achieve the project's total cancellation. If political strength behind it is stronger than opposition, and makes it pass, bureaucracy can intervene in the preparatory stages, joining committees, study groups, etc.: the object, here, is to water down as much as possible the project's contents. If, in spite of this all, the bill finally passed by Parliament is "dangerous" enough, its execution is still very much in bureaucracy's hands, and this allows for further *de facto* modifications. The last observation indicates that probably the effectiveness of bureaucracy's interventions tends to increase the closer their object is to the "executive" end of the decision-execution *continuum*. It is also likely that such effectiveness increases with the lowering of the question's political relevance. We have elsewhere tried to follow an example of bureaucracy's action, concerning the decentralization of administration and political decision-making through the establishment of Regions, and the above outline has proved rather useful.

It could be easy, however, to exaggerate the importance of bureaucracy's political interventions. In order to evaluate their real dimension, it is necessary to keep in mind the basically moderate character of the main political choices taken in Italy in the past decades, together with some coincidences in ideological orientations between bureaucracy and some of the most important pressure groups. It is, moreover, necessary to remember that the legitimacy granted by society to the political system (including bureaucracy) is rather weak, and that both bureaucracy and political structures are seriously inefficient. This has created, in spite of frequent reciprocal accusations, an objective condition of alliance between politics and administration, which occasionally borders on complicity. Conflicts are always kept within manageable limits, and are never such as to endanger permanently the system. This can be demonstrated, for example, by the fact that the political class has never really pressed for a reform of public administration, while bureaucracy has never openly exposed the frequent violations of the law committed by politicians.

PROPOSITIONS THÉORIQUES POUR UNE RECHERCHE EXPÉRIMENTALE SUR LES MOUVEMENTS SOCIAUX URBAINS[1]

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La tradition de la sociologie urbaine est axée sur la problématique de l'intégration sociale, comme il est normal si l'on se souvient de la demande qui en est à la base, étroitement liée au paternalisme réformiste visant à effacer les méfaits de l'industrialisation capitaliste sur le plan de la consommation collective.

Or, dans la société industrielle avancée, les problèmes urbains deviennent de plus en plus enjeu politique et lieu stratégique des nouvelles formes de lutte des classes. Les instruments d'analyse forgés par la sociologie urbaine sont alors, non seulement des instruments d'adaptation au système comme ils l'ont toujours été, mais parfaitement inopérants, du point de vue de la recherche, pour rendre compte de l'essentiel des problèmes posés par la pratique sociale.

De nouvelles formulations théoriques sont nécessaires pour expliquer cette importance croissante des „problèmes urbains" dans la politique, pour préciser leur portée et mettre en relief les mécanismes sociaux sous-jacents. Il s'agit de contribuer à jeter les bases d'une analyse sociologique de la politique urbaine.

I. ÉLÉMENTS THÉORIQUES SUR L'URBAIN ET LA POLITIQUE

Parler de politique urbaine renvoie à trois spécifications théoriques: le politique, la politique et l'urbain.

Le politique désigne les structures par lesquelles une société exerce la régulation des différentes instances qui la composent et assure la domination d'une classe sociale particulière.

La politique désigne le système de rapports de *pouvoir*. Le lieu théorique du concept de pouvoir est celui des rapports de classe. On entend par pouvoir la ca-

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[1] Ce texte essaie d'apporter certains outils conceptuels qui permettent d'avancer dans l'analyse du problème posé. Ils supposent un travail préalable de critique de la littérature sociologique et urbanistique existante, ainsi que certaines bases théoriques qu'il est impossible d'expliciter entièrement quand il s'agit de les développer. Je renvoie, pour la base documentaire et bibliographique, aux références signalées dans mes articles «Théorie et idéologie en Sociologie Urbaine», Sociologie et Sociétés, No 2, 1969, et «Vers une théorie sociologique de la planification urbaine», Sociologie du Travail, No 4, 1969.

pacité d'une classe sociale de réaliser ses intérêts objectifs spécifiques aux dépens des autres. Par intérêts objectifs, on entend la prédominance des éléments structurels qui définissent, par leur combinaison, une classe, sur les autres éléments qui sont en contradiction.

Le terme *d'urbain*, une fois éliminée la connotation idéologique relative à la soi-disante *culture urbaine*, désigne, en principe, deux ensembles de problèmes:
    a) ceux relatifs à l'organisation sociale de l'espace;
    b) ceux relatifs aux processus de consommation collective
(consommation=reproduction de la force de travail).

Mais, en fait, l'organisation de l'espace, en tant que telle, relève de ce qu'on peut appeler les problèmes *régionaux*, car il est impensable de ne pas traiter le réseau urbain dans son ensemble. Donc *urbain* spécifie encore plus, faisant appel à une certaine limite territoriale à l'intérieur de laquelle on trouve „la ville". Cette réalité, en dernière analyse, est une certaine *unité résidentielle de la force de travail*. Une agglomération n'est pas définie par une unité productive, car cela se réfère aux entreprises, aux branches, aux trusts, mais par une *unité de consommation collective*, plus ou moins correspondant à l'organisation quotidienne d'une partie de la force de travail (par exemple, le seuil défini par les flux de migrations alternantes établit les limites d'une agglomération).

A l'intérieur d'une frontière ainsi définie, on trouve d'autres éléments (production, échange, gestion symbolique) et, en même temps de sous-ensembles (zones, quartiers), mais on ne peut pas oublier la définition de la frontière car elle établit une spécification par rapport à la consommation.

Les problèmes urbains sont alors les problèmes ayant trait à la consommation collective, définis dans une unité de consommation (l'agglomération) et les problèmes ayant trait à l'organisation et fonctionnement de cette unité dans la mesure où la modification de l'unité a aussi une conséquence sur les processus de consommation en question.

L'agglomération, en tant qu'unité de consommation, joue le même rôle que l'entreprise, en tant qu'unité de production.

Ces éclaircissements permettent maintenant de délimiter l'objet de notre recherche.

Si le champ d'expérience a une unité propre, à savoir l'articulation du *pouvoir* et de *l'urbain*, son appréhension peut être faite essentiellement dans deux perspectives différentes, suivant que l'on s'intéresse aux *structures* ou aux *pratiques*, ou plus clairement, suivant que l'objet théorique soit l'analyse d'une modification des arrangements du système (formation sociale) ou les processus de sa transformation, à savoir, les rapports sociaux en tant qu'expression directe ou réfractée des classes sociales. Si cette différence de perspective est essentielle dans la démarche concrète d'une investigation, nous verrons que, au bout du chemin, elle doit rendre compte de l'ensemble du processus, quel que soit le point de départ, car les structures ne sont que des pratiques articulées et les pratiques que des rapports entre des rapports définis par certaines combinaisons d'éléments structurels.

L'étude de la politique urbaine se décompose ainsi en deux champs analytiques, indissolublement liés dans la réalité sociale: la planification urbaine, sous ses différentes formes et les mouvements sociaux urbains.

Nous abordons ici, l'élaboration d'outils conceptuels adéquats à cette seconde perspective. Ce qui exige l'introduction d'un cadre théorique dont la seule justification sera celle de la fécondité dans la recherche concrète.

A la base de notre analyse se trouvent les concepts de système urbain et de système d'agents urbains.

Par *système urbain* on entend l'articulation spécifique des éléments de la structure sociale (économique, politico-jurdique, idéologique) à l'intérieur d'une unité de consommation collective.

Le *système urbain* (structure sociale à la base des processus sociaux dans les unités de consommation collective) est défini par l'ensemble des rapports entre ces éléments fondamentaux:

Élément *P* (Production): Moyens de production spécifiques.

Élément *C* (Consommation): Force de Travail spécifique.

Élément *E* (Échange) entre *P* et *C*, à l'intérieur de *P*, à l'intérieur de *C*.

Élément *G* (Gestion) ou régulation des rapports entre *P*, *C* et *E* en fonction des lois structurelles. *G* représente l'articulation avec le système politique, sans pour cela épuiser les rapports avec ce système.

Élément *S* (Symbolique) qui exprime la spécification de l'idéologique au niveau des formes spatiales.

Toutefois, dire que l'élément Consommation spécifie la reproduction de la force de travail ou l'élément Production — la reproduction des moyens de production au niveau de l'unité urbaine, renvoie à une problématique beaucoup trop vaste pour pouvoir être traduite dans ces propositions explicatives. Il faut donc décomposer ces éléments.

L'analyse interne de chaque élément du système urbain, pour ne pas rester intuitive, doit mettre à l'œuvre un même principe. Les spécifications ne doivent pas introduire de nouveaux éléments par rapport à ceux déjà définis théoriquement. Nous dirons donc que chaque élément se décompose en sous-éléments définis par la réfraction sur lui des autres éléments (y compris lui-même) et/ou des autres systèmes de la structure sociale.

1) Consommation

L'élément consommation exprime, au niveau de l'unité urbaine, *le processus de reproduction de la force de travail*. Nous ferons donc la distinction entre reproduction simple et élargie de la force de travail et nous distinguerons dans la reproduction élargie la réfraction des trois systèmes: économique, politico-juridique et idéologique.

Exemple

reproduction simple de la force   Cl   Logement et équipement matériel
de travail   minimum (égouts, éclairage,
                                            voirie, etc...)

reproduction élargie de la force
de travail

= élargissement à l'intérieur du
système économique (repro-   Espaces verts, pollution, bruit, etc...

duction biologique)	$C2$	(environnement)
= élargissement sur le système institutionnel (politico-juridique) (développement des capacités+ socialisation)	$C3$	Équipement scolaire
= élargissement sur le système idéologique	$C4$	Équipement socio-culturel

2) *Production*

Distinction fondamentale à faire entre les instruments de travail et l'objet de travail (matière première notamment), d'une part, de l'autre dans l'orientation de la production au système organisationnel en tant que tel ou en tant qu'organisation productive.

			Exemple
=Éléments internes au procès de travail	- Instruments de travail (Pl)		Usines
	- Objet de travail ($P2$)		Matières premières
=Rapport entre le procès de travail et système économique		($P3$)	Environnement industriel (milieu technique)
=Rapport entre procès de travail et autres systèmes, ainsi qu'avec l'organisation sociale		($P4$)	Gestion, informations (bureaux)

3) *Échange*

L'élément *échange*, par définition, peut se décomposer en autant de sous-éléments qu'il y a de transports possibles à l'intérieur ou entre les éléments et systèmes de la structure sociale par rapport à une unité urbaine donnée:

Transfert	*Sous-Éléments*	*Exemple*
Production→Consommation	$E1$	Commerce et distribution
Consommation→Production	$E2$	Migrations alternantes (transports urbains)
Production→Production	$E3$	(. Transports marchandises) (. Ordres et gestion)
Consommation→Consommation	$E4$	(. Circulation) (. Mobilité résidentielle)
Consommation→Idéologique	$E5$	Emission d'information, spectacles, etc. . .
Production→Idéologique	$E6$	Monuments
Consommation→Politique	$E7$	Centres décisionnels
Production→Politique	$E8$	Centres d'affaires

4) Gestion

L'élément *gestion* articule le système urbain au système politique et règle les rapports entre les éléments. Il se définit donc par sa position dans une double dichotomie Global / Local (représentant de l'ensemble du système politique ou lié aux conditions locales) et portant sur un des éléments du système ou sur l'ensemble (Spécifique / Général). Ce qui détermine quatre sous-éléments possibles :

	Local	Global
Spécifique (portant sur l'élément)	Gl Agence urbaine	G3 Organisme de planification
Général (portant sur les rapports entre les éléments)	G2 Municipalité	G4 Délégation d'autorité centrale (Préfet)

5) Symbolique

L'élément *symbolique* prendra des formes particulières suivant l'importance relative des éléments et places de l'instance idéologique, en particulier en combinant les effets de *communication* et *légitimation* avec les places d'*émetteur, récepteur* et *relais* par rapport au message.

6) Sous-éléments et système de places

Cette décomposition interne de chaque élément permet d'approcher des situations concrètes dans la mesure où l'on spécifie beaucoup plus l'analyse. Mais si l'on repère le *lieu* d'une contradiction, il faut encore que celle-ci puisse s'exprimer socialement par l'appropriation différentielle de ces éléments par les acteurs. Il y a donc à définir, à l'intérieur de chaque sous-élément des places entre lesquelles se répartiront les acteurs suivant leur position dans la structure sociale. Ce sont ces différences de places occupées par les acteurs qui expliquent des pratiques sociales contradictoires et permettent des transformations dans le système urbain qu'il faut donc non seulement décomposer en sous-éléments mais *différencier*, en précisant, à l'intérieur de chaque sous-élément, des *niveaux* et des *rôles*.

Ainsi, par exemple, en *C1* (Logement)

. niveaux
- Logements de luxe
- Logements sociaux (+, —)
- Taudis, etc. . .

. rôle
- Hébergé
- Locataire
- Co-propriétaire
- Locataire

Les rapports qui entretiennent entre eux et avec la structure sociale, les différents sous-éléments du système urbain, leurs rôles et leurs niveaux, définissent la

conjoncture. L'insertion des agents-supports dans la trame structurelle ainsi cons-
tituée définit le système urbain aux pratiques sociales, seules réalités significatives.

Ceci dit, le système urbain n'est pas extérieur à la srtucture sociale: il la spé-
cifie, en fait partie. Mais dans toute pratique concrète, il faut tenir compte de son
orientation à d'autres niveaux que ceux spécifiés dans le système urbain. Cette
articulation se fait par l'insertion nécessaire des acteurs urbains dans le système
de places économiques, politiques et idéologiques de la srtucture sociale, ainsi que
dans les différentes relations entre les places et qui définissent les systèmes du point
de vue interne.

Concrètement, les acteurs urbains auront une valeur (qui peut être aussi l'ab-
sence (valeur 0) par exemple des acteurs non définis dans le système productif:
les employés) dans les trois systèmes: économique, politico-juridique, idéologique.

D'autre part, dans toute société historiquement donnée, les processus structu-
rellement déterminés s'insèrent dans des formes sociales cristallisées qui en font
la spécificité de chaque moment. Les pratiques „urbaines" naissent à partir de
l'insertion du système urbain articulé à la structure sociale générale, dans ces for-
mes sociales, à partir de cette triple détermination des agents-supports et du champ
des pratiques ainsi constitué.

Organisation sociale évoque trop de domaines et se réfère à trop de formes
pour qu'on ne soit pas obligé de sélectionner certaines caractérisations particu-
lièrement significatives eu égard au problème abordé.

Nous avons considéré comme fondamentales les trois dimensions des *formes
écologiques* (ou relatives à l'organisation de l'espace) à partir de la double dialec-
tique concentration/centralité et de l'articulation ou séparation des fonctions dans
l'espace, la *stratification sociale* (répartition du produit entre les supports) et le *sy-
stème organisationnel* (ou agencement formel des systèmes de moyens spécifiques).

II. LA DÉTERMINATION STRUCTURELLE DES PRATIQUES URBAINES

On entend par pratique urbaine toute pratique sociale relative à l'organisa-
tion interne des unités de consommation collective ou qui, visant les problèmes
généraux de la consommation collective, prend comme champ d'action les unités
urbaines.

Les pratiques urbaines forment système. Mais elles n'ont pas de signification
par elles-mêmes. Leur seule signification est celle des éléments structurels qu'elles
combinent et de ses interactions successives. Ces combinaisons se réalisent au moyen
des agents, à partir de la détermination et appartenance multidimensionnelle de
ces agents-supports. *Le champ des pratiques urbaines est un système de combinai-
son entre combinaisons données d'éléments structurels.* Il réalise et manifeste, à la
fois, les lois structurelles du système, aussi bien de son organisation que de sa trans-
formation.

Le tableau résume l'ensemble des déterminations possibles. Malgré sa com-
plexité il n'est qu'un cadre possible, et un processus social peut être lu suivant dif-
férents niveaux de profondeur. Il peut en effet y avoir mise en rapport des prati-
ques et des conséquences et situations structurelles avec un classement simple qui
combine quelques éléments fondamentaux ou, à l'inverse, analyse d'un processus
particulier entre les sous-éléments. A chaque objet de recherche correspond un élar-
gissement, rétrécissement ou arrangement particulier du champ des pratiques et,

par conséquent, une redéfinition du système d'acteurs-supports. En un mot, tout dépend du „problème" traité. On parle de places et non pas d'individus.

Quel est l'apport réel de ce tableau?

Si l'on se place du point de vue des *structures* (étude de la „politique urbaine"), il permet d'étudier les inputs-outputs de chaque problème traité, ou, plus claire-

Tableau — Système de places déterminant les pratiques urbaines

ment, étant donné une situation de décalage ou contradiction dans un des processus, quelles en sont les conséquences pour le système.

Si l'on se place du point de vue des pratiques, il permet à la fois de déceler les processus de formation de certaines pratiques (par examen des combinaisons structurelles qui en sont la base) et de pouvoir les définir par leurs effets et non pas par leur subjectivité. Du coup, la subjectivité elle-même est éclairée en tant que jouant un certain rôle dans la structure sociale. Le sens n'a de sens qu'en dehors de lui-même. Mais ce dehors ne peut être que la production d'un effet socialement identifiable, donc inséré dans un cadre prédéfini.

Par rapport à une pratique urbaine on peut donc :

Définir la combinaison structurelle (manifestée par les caractéristiques des acteurs) qui l'a suscitée.

Nommer (ou typologiser) la partique, par l'analyse de son *horizon* (conséquences structurelles prévisibles dans la logique de son développement).

Par exemple :   — Reproduction du système urbain (Régulation).
                  — Modification d'un élément du système (Réforme).
                  — Reproduction, au moyen du système urbain, d'une autre instance structurelle (Maintien de l'ordre).
                  — Transformation de la loi structurelle du système urbain (Mouvement social urbain).
                  — Remise en cause de l'autorité système politique (Mouvement social à base urbaine).
                  — Aucun effet, sauf la pratique elle-même (Mouvement démagogique)

Établir l'histoire naturelle de chacune de ces pratiques, ce qui demande de caractériser l'ensemble des pratiques qui s'articulent et s'opposent à voir dans quelle mesure leur charge structurale de départ et leur horizon différentiel les font disparaître, être subordonnées ou s'imposer. L'étude d'un mouvement social urbain (défini par sa détermination et son horizon) devient alors l'étude de cet ensemble de pratiques contradictoires, réalisant des lois générales mais étant toujours unique parce que conjoncturel.

Avancer des hypothèses sur toutes les combinaisons possibles dans le tableau paraît à la fois excessivement compliqué et largement superflu. En effet, il ne s'agit pas d'épuiser toutes les situations possibles, mais de découper une réalité à l'aide de ces concepts, et obtenir, à la fois, la mise à l'épreuve des lois générales déjà connues et la découverte des nouveaux rapports qui montrent le déploiement différencié de la même logique.

Pour cette raison, nous dirons qu'il n'y a pas d'hypothèses relatives au tableau, mais des *limites* et des *règles opératoires*. Mais ces hypothèses peuvent être suscitées par rapport à une recherche spécifique.

III. HYPOTHÈSES POUR L'ÉTUDE DES MOUVEMENTS SOCIAUX URBAINS

Quelles sont les conditions et les processus de formation de ces mouvements sociaux?

Un mouvement social naît de la rencontre:

1) d'une certaine combinaison structurelle, qui cumule plusieurs contradictions, avec 2) un certain type d'organisation. Tout mouvement social provoque, de la part du système un contre-mouvement social qui n'est que l'expression d'une intervention du système politique (intégration-répression).

1) *Le cumul de contradictions* se fait par l'insertion des agents dans les places contradictoires à l'intérieur d'un même élément du système urbain, structure sociale ou organisation sociale ou d'éléments différents à l'intérieur d'une relation (par exemple: rôle de locataire ou propriétaire à l'intérieur de l'élément Consommation₁ (logement); ou Force de Travail / Non Travail à l'intérieur de la relation propriété, ou Force de Travail/Moyens de Production (C/P) à l'intérieur de la relation d'appropriation réelle).

On peut donner les règles suivantes:

Plus il y a de contradictions cumulées, plus il y a de charge sociale potentiellement mobilisatrice.

Plus les contradictions sont dans le système économique (ou sa spécification, le système urbain) ou dérivées de contradictions dans ce système, et plus elles sont importantes.

Au contraire plus elles sont purement politiques ou purement idéologiques et plus elles sont intégrables dans une régulation du système.

Plus les contradictions sont fractionnées dans leur traitement et moins il y a de chances pour l'affrontement et la mobilisation.

L'affrontement direct entre des pratiques fondées sur ces combinaisons structurelles dont l'opposition relève d'une contradiction fondamentale ne peut se résoudre que par une régulation du système ou une articulation avec une autre contradiction. Ainsi toute contradiction non résolue mais posée entre des éléments complémentaires et opposés, débouche sur une autre contradiction. L'enchaînement des contradictions (*manifesté par des modifications dans le système d'acteurs*) débouche sur le lieu de condensations des contradictions du système: *le système politique*.

Quand il y a non correspondance entre les éléments appropriés par les acteurs en présence, les contradictions ne peuvent s'exprimer qu'à travers l'articulation de ces éléments isolés dans d'autres champs de pratiques sociales.

L'articulation d'autres pratiques aux pratiques urbaines produit une augmentation de la contradiction quand elles sont définies sur des contradictions fondamentales et vice versa.

L'intervention de l'idéologie a une importance particulière au niveau des formes d'expression du mouvement; l'intervention du politique, au niveau de leur *contenu* historiquement donné; l'intervention économique, au niveau de leur *dynamique* (horizon structurel).

2) Le rôle de *l'organisation* (système de moyens spécifiques à un objectif) est fondamental car, si les acteurs-supports permettent la constitution de combinaisons entre les éléments structurels, c'est l'organisation qui est le lieu de fusion ou articulation avec les autres pratiques sociales. Quand il n'y a pas d'organisation, les contradictions urbaines s'expriment soit de manière réfractée, à travers d'autres pratiques, soit de manière „sauvage", pure contradiction vide d'horizon structurel.

La genèse de l'organisation ne relève pas de l'analyse des mouvements sociaux, car seuls ses effects sont importants. Elle est cristallisation de pratiques sociales et ses caractéristi.ues vont déterminer les conséquences qu'elle aura sur certaines combinaisons structurelles exprimées dans le système d'acteurs.

Une organisation se définit, structurellement, comme une intervention, à partir d'une certaine combinaison structurelle (exprimée par *un horizon d'appartenance* somme des combinaisons des acteurs à la base) sur une autre combinaison structurelle différente et qui l'intègre.

L'horizon de référence : somme des combinaisons des acteurs qui la composent si les objectifs de l'organisation sont réalisés).

Le rôle de l'organisation dans la formation d'un mouvement social est de *lier* les différentes contradictions présentes dans les combinaisons structurelles auxquelles elle a à faire. Le rôle de l'organisation pour détruire le mouvement social est de *délier* les contradictions qui le sont déjà.

D'autre part, l'organisation peut naître du système d'acteurs urbains ou être importée d'autres pratiques.

Hypothèse fondamentale: si l'organisation naît de simple mise en rapport des éléments contenus dans une partie du système d'acteurs urbains, elle ne change pas qualitativement l'orientation et assure uniquement l'action fractionnée déterminée par les différentes places. C'est le niveau Q, de l'organisation (coordination de la spontanéité) qui ne peut pas susciter un mouvement social. Donc pour qu'il y ait mouvement social il faut nécessairement l'union d'une enchaînement de contradictions en profondeur qui ne peut être fait que par une organisation importée d'autres pratiques. L'organisation uniquement "urbaine" ne peut être que, au maximum instrument de *réforme* (cf. notre typologie de pratiques urbaines).

Dans tous les autres cas, l'organisation, tout en intervenant dans le système d'acteurs urbains, a une origine extérieure et ne peut être que: (de par ses objectifs, définis en dehors du système urbain).

1. Instrument de domination   Instrument de
   Intégration   contestation
(courroie de transmission)
                2. Contestation économique
                3.   „   idéologique
                4.   2+3   politique
                5.   2+4
                6.   3+4
                7.   3+4
                8.   2+3+4

L'organisation n'est pas de Deus ex Machina du mouvement social. Son explication échappe à une analyse spécifique de l'urbain (dans la mesure où elle est cristallisation d'autres pratiques). Mais la nouvelle organisation, spécifique au mouvement social urbain, est parfaitement analysable à partir de la fusion des caractéristiques de l'organisation „importée" et des combinaisons structurelles présentes dans le système d'acteurs. Il y aura mouvement social dans la mesure où la pratique et le discours de l'organisation lient les contradictions supportées par les acteurs, sans les délier de façon fractionnée (idéologie réformiste) et sans les fondre dans une seule opposition globulisante (utopie révolutionnariste).

Il y a mouvement social urbain quand il y a correspondance de contradictions structurelles fondamentales du système urbaine et d'une ligne juste à travers une organisation formée à partir de la cristallisation d'autres pratiques.

IV. LA MISE EN PRATIQUE DE LA RECHERCHE

S'il est parfaitement arbitraire d'aborder les problèmes méthodologiques sans avoir délimité au préalable un objet empiri ue, on peut tout au moins signaler le *style de travail*, afin d'initier le lien entre les préoccupations théoriques dont il a été question dans cette note et les résultats de recherche auxquels il faut aboutir.

D'abord, on peut déjà préciser par quoi il faut commencer dans l'étude des mouvements sociaux urbains. Ou, plus exactement, il *ne faut pas* commencer par là où on le fait d'habitude, *les organisations*. Il s'agit de repérer des contradictions ("problèmes") ou signaler ces mobilisations specifiques à ces problèmes. A partir de là, il faut:

Repérer l'enjeu (ou les enjeux) et les coder en termes structuraux.

Repérer les groupes sociaux intervenant par rapport à chaque enjeu et les coder dans les mêmes termes, à différents niveaux de profondeur, suivant le tableau.

Caractériser les organisations et déterminer leur articulation au système d'acteurs.

Ensuite, on procèdera à l'analyse concrète de la situation qui sera en même temps la démonstration d'une loi, dans la mesure où elle réalise cette loi en devenant intelligible à travers la mise en rapport des éléments réels soumis à notre codification théorique.

On devra surmonter les difficultés classiques dans la recherche quantitative, d'application de la méthode expérimentale à une situation non expérimentale. On partira donc de l'hypothèse de la fermeture du champ avec considération en tant que constantes de tous les éléments non compris dans chaque analyse spécifique. Il faudra ensuite trouver, au niveau qualitatif, l'équivalent des procédures de contrôle courantes dans la recherche quantitative.

La technique de vérification expérimentale qui semble la plus adéquate est celle d'un *modèle de simulation* qui fonctionnerait suivant deux règles opératoires fondamentales:

1. La vérification se fait suivant le schéma présence/absence et suivant la détermination de chaque enchaînement par une seule combinaison d'éléments.

2. La procédure de contrôle (analogue au coefficient de corrélation partiel) consiste à voir l'organisation différentielle des pratiques suivant le découpage distinct du système d'acteurs. (Par exemple, à l'intérieur des agents définis par leur appartenance à un bas niveau du rôle de locataire de C_1 (Logement), on découpe en ajoutant un autre critère, réfraction de la structure sociale au niveau du système économique (Employés, Ouvriers), et en comparant leur comportement par rapport à la pratique étudiée (par exemple, grève des loyers).

Normalement, puisque la situation n'est pas expérimentale et qu'il s'agit de pratiques et non pas de réponses à un questionnaire, il sera difficile d'obtenir l'ensemble des contrôles. Mais l'on disposera, au moins, de plusieurs systèmes de pratiques, correspondant à différents regroupements des mêmes acteurs et au traitement de problèmes divers. A partir de cette diversité de situation, on aura des éléments de comparaison, et donc d'explication, car on se rapproche fortement de situations de recherche familières au sociologue.

Si les problèmes techniques à résoudre restent énormes, la voie est ouverte pour leur position et, par conséquent, tendancieusement pour leur solution. Une voie qui nous semble, sur le plan théorique et sur le plan méthodologique, aussi féconde qu'inexplorée.

SOME CRITICAL CONSIDERATIONS ON THE OPERATIONAL
ANALYSIS OF THE RELATIONSHIP
"MANAGEMENT — PUBLIC RESPONSE"
IN PROCESSES OF SOCIAL TRANSFORMATIONS

PAVEL APOSTOL

ROUMANIA

Clarence B. Randall notices with much justification the appearance and pro-liferation of a true *Folklore of Management*. This may be interpreted as a transpo-sition, to the level of the common sense, of what we want to call *managerial ideology*. The term designates, in our contribution, a set of ideas expressed in a pseudo-theoretical manner, and showing the mystified and mythicizing awareness of the managerial activity.

Mystification (and/or self-mystification) is merely the way one regards the managerial activity outside of its dependence with the systems laws of the society, as a whole: *mythicizing* lies in the trend to invest the efficiency-principles of mana-gerial activity with a status of autonomous, hypostasized social forces.

The literature of the matter admits that concepts as "simulation", "engineer-ing", "design behaviour of a practising engineer" a. s. o. "depend, for their eluci-dation" too, as stated by I. I. Mitroff,[1] "on a host of underlying philosophical concepts".

The sociology of scientifical knowledge, too, has emphasized the *impact* of philosophical options over the theoretical construction and even over the experi-mental "démarche"'s.[2] Thus, a. thinker as remote from Marxism as Philipp Frank explicitly adheres[3] to the thesis advanced by Fr. Engels in *Dialectics of Nature*[4]: scientists who highly denigrate philosophy are just the slaves of the worst vulgar-ized philosophical theories. Contrary to our interpretation, C. West Churchman[5] asserts the presence precisely of this determination within the simulation process

[1] I. I. Mitroff, Fundamental Issues in the Simulation of Human Behavior: A Case Study in the Strategy of Behavioral Science in Management Science, 16, 1969, 12, pp. 635 sqq.

[2] C. B. Barber, W. Hirsch (eds.), The Sociology of Science, New York, 1962, passim.

[3] Ph. Frank, The Philosophy of Science, New York, 1956.

[4] Fr. Engels, Dialectica naturii (Roumanian, in K. Marx, Fr. Engels, Opere, vol. 20, Bu charest, 1964, p. 508).

[5] C. West Churchman, An Analysis of the Concept of Simulation, in A. C. Hoggart- and F. E. Balderston (eds.), Symposium on Simulation Models, Cincinnati, 1963.

basic to the operational analysis in general and to its applications to the study of managerial activity in particular.

Further considerations aim at demystifying and demythicizing the concepts used in analyzing managerial activity. Such criticism might contribute to the establishing of the results of operational research on realistic, rational, scientific foundations.

We thus usefully achieve a more pertinent operational modelling of managerial activity regarded as an interaction with the public response triggered under conditions of social transformation.

The present expounding lies within the theoretical framework of a certain methodology of investigation and social guidance of the action, for which we proposed the denomination of *generalized operational research* — abbreviated *GOR*[6] based on a certain interpretation of Systems Theory[7] and of social action.[8]

Criticism of the managerial interpretation of the term "management". — We name "managerial interpretation" given to a term the significance currently assigned in the literature of the "management theory" which has no critical reference — either explicit or implicit — to the above determined as "managerial ideology".

Obviously, management (abbreviated "*m*" or "*M*") is a relational, more accurately, actional term.[9] It usually designates a *process specific to entreprises or similar organizations* in themselves. The process includes "the functional activities of planning, organization, direction, coordination and control"[10]. If we formulate its validity domain in terms of "problem-solving"[11], "*m*" (German: *Betriebsführung*, French: *gestion*, and the like) refers to the solving of a determined class of problems of the social activity.[12]

Irrespective of the above standpoints, the use of the term "*m*" identifies some common characteristics: *a*, its reference to an activity of *administrative, operative,*

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[6] In a concise statement, *GOR* stands for an extension of *OR* principles to the investigation and guidance of a certain (abstract) system of social action. *SSAş GOR* achieves such an extension to the study of the abstract *SScA* behaviour by deferring the restrictions imposed to *OR* by its application to specifical (micro-) social systems (organization, enterprise) and to decision states related to their functioning; see our contribution, Elemente pentru o epistemologie a ştiinţelor tehnice (1965), in Revistă de filosofie, 1968, 4; Cibernetică, cunoaştere, acţiune, Contribuţii la metodologia «acţiunii-cunoaştere, Biblioteca de filosofie şi sociologie, Editure politică, Bucureşti, 1968; Modelarea cibernetică a acţiunii umane, in Teoria acţiunii umane, series Forum-ştiinţe sociale, Bucharest, 1969, pp. 95-108.

[7] Cf. Cibernetică, cunoaştere, acţiune, passim.

[8] Cf. Modelarea cibernetică a acţiunii umane, passim.

[9] Above quoted work, prop. 3.633-3.634.

[10] J. Gould, W. L. Kolb, Dictionary of the Social Sciences, the Free Press of Glencoe, 1964, p. 403.

[11] A. Newell, I. C. Shaw, M. A. Simon, Empirical Exploration with the Logic Theory Machine: A Case Study in Heuristics, in E. A. Feigenbaum and J. Feldman (eds.), Computers and Thought, New York, 1963.

[12] A. Henderson and R. Schlaifer formulated the management *problem* as follows: «A group of limited resources must be shared among a number of competing demands, and all decisions are «interlocking» because they all have to be made under the common set of fixed limits» (A. Henderson and R. Schlaifer, Mathematical Programming, in E. C. Burks, J. F. Chapman (eds.), New Decision-Making Tools for Managers, New York, Toronto, London, 1965, p. 32).

centural guidance as related to the system under consideration, *b*, in contrast with the terms "administration", "guidance" and the like, *"m" stresses* the performance aspect of the process — a performance estimated by utility functions from the viewpoint of the system considered and expressed by *efficiency* or by *profit*, *c*, the environment of the system where the managerial activity occurs is prevailingly considered as application range of the system performance that has as exclusive or first aim the optimization of its efficiency, therefore *d*, restrictions imposed by the environment to the achievement of the efficiency or of the profit are recorded as limitations to the system independence, as constraints, in cybernetics as perturbations or distortions.

This point of view, implied in ordinary operational analyses of the managerial activity, accounts for the insufficiency and the lack of pertinence of some solutions, also, revealed by many a specialist, among whom we mainly refer to D. N. Chorafas'[1] authority, as well as to the interesting proceedings of the International Symposium held in 1965 by the Tavistock Foundation.[1]

The methodological fault of the specific prospect of managerial ideology — and which sometimes also leads the operational research into the wrong pathway — may be evidenced by sociological criticism.

It is obvious that the entreprise-system and generally the similar organizational systems represent *microsystems* of some *global-social-systems* respectively of their sub-systems and partial-systems.[1] The microsystems enjoy only a relative independence because their *very existence and development is structurally and functionally* dependent on and, to *a great extent,* determined by the *social-macrosystems* where thery appeared.

Their relative independence is revealed merely within *the limits allowed* by this dependence. Of course, if the activity of micro-systems was considered only technologically, i. e. by reducing it to efficiency with respect to the already mentioned finality, operational research might afford means of optimization of the *microsystem* (enterprise or organization) but *only within the limits* of its dependence on the *overruling macro-system*. However, if the optimization requirements of the micro-system are conflicting or only diverging with the action of the system laws of the macrosystem, then the requirements for the achievement of the *macro-system* efficiency *explicitly become dependent upon the criteria imposed by the macro-system. A pertinent operational model of the managerial activity should contain, besides the definition of the intrinsic finality of the micro-system under consideration, also that of its functional finality determined by the overruling macro-system* (the global-social-system, its sub-systems and partial-systems). The special efficiency of the micro-system may reveal only within limits determined by the extent of its social efficiency, of its functionality. Most operational models (see two randomly chosen such schemes in[15]) deal with problems of optimization (of course

[13] D. N. Chorafas, La simulation mathématique et ses applications, Paris, 1966.

[14] J. R. Lawrence (ed.), Operational Research and the Social Science, London, 1966.

[15] For the definition of the sub-system and the partial-system, see our contribution Modelarea cibernetică. . ., prop. 1.2211 and 1.2212.

[16] Usually within abstract models, the environment appears as an unspecified influencing factor. Thus in Control of Research and Development by Top Managers in Forty-eight Very Large Companies (quoted works, note 14, p. 129-146) we find the scheme on p. 182.

of strategical type if one wants to confer upon them an operative value) or of sta-
bilization (in Ashby's sense, i. e. endowment of the micro-system with propertie-
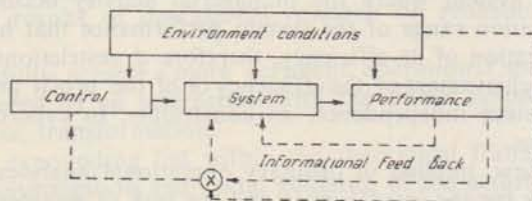
Fig. 1

Such a model undoubtedly points to the influence of environment but, among the various
actions undergone by the system, does not alter the specific value of the influence exerted by over-
ruling macro-systems.

The same ambiguous character of the reference to environment (hence to overruling macro-
systems), is found more analytically in W. L. Zimmermann's model («Auf dem Wege zu einem
ganzheitlichen Informations- und Entscheidungssystem», in *Elektronik*, Datenverarbeitung, 1969,
10-11-12, i. e. 12, p. 240).
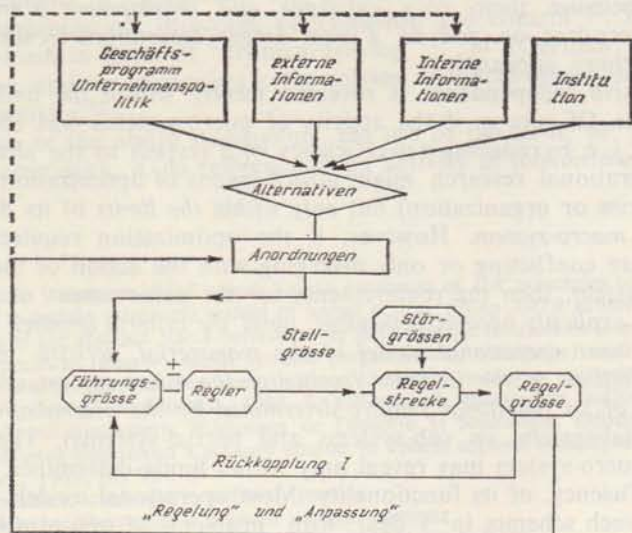
Fig. 2

Even the analytical character of Zimmermann's model enables to evidence the general
basical fault of operational (cybernetic) models of the managerial activity: they never explain
that the «interne Führungsgrösse» of the enterprise may vary only within the limits of the field
determined by the «Führungsgrösse» imposed to the micro-system by the macro-system whose
partial-system it is and upon which it functionally depends. The fact that within capitalist
society the Führungsgrösse imposed by the macro-system is neither formulated nor previously

of ultra- and multi-stability, cf. [17] by reducing the action of overruling macro-systems to the role of primary, external information or information on the conditions, when actually *the action of macro-systems* represents for its micro-systems a command input (*Führungsgrösse, control input*) achieved by certain positioning variables (*Stellgrösse, correcting variables*).

The above considerations lead to the statement of a necessary pertinence condition of operational models of the managerial activity.

Remarks on the pragmatic dimension of the term "public response". — The expression "public response" (abbreviated *PR*) has syntactical and semantical properties analogous to the term *m*: the relational, actional character a. s. o. It currently designates a certain totality of activities or behaviour *triggered* at a certain social group by an action or a defined totality of social actions.[13] *PR* is *functional*, but usually *not causal*, dependent on a certain revealable action.

In its contents, *PR* is the ability of a certain social group — organized as a micro-system — to perceive a certain action as a *signal* for the achievement of a proper activity. This ability is called sometimes *responsiveness*.[1] The action of *PR* is functionally dependent on the signal-action. The positive or negative dependence (of various degrees) is *determined* by the meaning of the signal for the group achieving a *PR*. Therefore *PR* depends on the (real and/or imaginary) concordance degree established by the social group under consideration (the public), on the one hand, among the finalities respectively the programmes, the plans, the projects of real and/or apparent action, consistent with the meaning and of the signal-action and, on the other hand, among the finalities, resp. the programmes, the plans, consistent with the proper action projects.

It is obvious in this case, too, the dependence and determination of *PR* on the relationship between micro-systems and reference macro-systems.

Validity field of the relationship *M-PR*. — A certain managerial activity will release certain *PR* s.

One should distinguish: *a* — *PR* of the "population" of the micro-system to which the managerial centre under consideration belongs, *b* — *PR* of the managerial centres, resp. of the populations of some micro-systems of the environment of the (micro-)system that carried out an action received as signal by these, *c* — *PR* of the overruling social macro-systems, i. e. the global-social-system, the subsystems and the corresponding partial-systems.

The *totality* of such displays on various structural stages actually represents *PR* as any managerial act. All these stages interact with a determined weight of

standardized but is achieved on the market, does not on principle change anything. It is but obvious that efficiency or profit of the (micro-)system (enterprise or organization) occurs on, and by the agency of, the market and this imposed to the activity certain Führungsgrössen acting within the limits of some Führungsgrössen consisting of values conditioning the market realizability of the designed performance. Thus, everything that has been realized or may be realized (is realizable) on the market of the designed performance commands the managerial activity.

[17] W. Ross Ashby, Introduction to Cybernetics, London, 1956.

[18] Usually the term «response» or «reaction» is interpreted in terms of the relationship *S-R*.

[19] E. G. A. Etzioni, The Active Society, London, New York, 1968, p. 503.

functional value of the respective stage within the macro- or micro-structure of the given system.

Relationship *M-PR* may suggest an analogy with the scheme *S*(timulus) — *R*(eaction). The relationship of the managerial act to the public response is not of this type. It could be rather assimilated to a relationship of cybernetic "circularity" (Ashby) with a specific interaction between the two terms, i. e. *feed back* at the same time positive and negative. Namely, managerial acts — as command messages — may strengthen or lessen the *responsiveness* ability of the members of the society, exactly as their objectively verifiable *responsiveness* exerts an informational action of "direction and control" (cybernetically, positive and/or negative) on the carriers of the managerial activity.

Processes of social transformation (inside or outside the micro-system) *represent critical moments in the development of the relationship M-PR.*[20]

Optimization criteria of the relationship *M-PR* — the critical moment of social transformation. — Consequently, any managerial act aiming at a social transformation raises the problem of the optimization of the relationship *M-PR*. It is intuitively obvious that *PR for a managerial act with a view to a determined social transformation depends on the suitable or unsuitable consciousness* (both able to be influenced by purely coercive, persuasive or mixed means), *that the public under consideration posseses on the agreement between these transformations and the conditions of stability, security resp. of progressive development of their existence* (status) *made aware and/or experienced* as their interests.[21]

Usually the achievement of a social transformation depends, to variable extents, on the attitude of a certain "public". Its active support is in most cases the fulfilment condition of the designed transformation. The obtainment of a positive *PR* as to the social transformation designed by a managerial centre is the goal of its strategic activity. Operational research has analysed the optimization criteria of *PR*. The participation of the public represents the *optimum* for the transformation achievement. The structures of activating[22] or *mobilization*[23] are optimization models of the "public" participation. They are remarkably analogous to the process analysed by A. Gramsci: the *organization* by the centre of political guidance of the *agreement and collective action will* (social group, social class, society, as global-system) with a view to achieving the designed social transformation.[24] According to theoretical and practical reasoning, the distinction is to be made between models of *activating* or *mobilization* under various economic, political, ideological dependence resp. independence conditions as related to the managerial centre that initiates a certain social change.

The main means to achieve persuasive processes of *activating* or *mobilization* are today the mass-media.

[20] «Critical Moment» in the sense given to the term in *OR*.

[21] The agreement may be logically expressed by the compatibility relationship of the managerial programme of the transformation to the proper programme of the «public» activity.

[22] B. M. Gross, Activating National Plans in quoted works, note 14, p. 449-482 and therein mentioned bibliography.

[23] A. Etzioni qu. w., p. 390 and sqq. where a significant bibliography is given.

[24] A. Gramsci, Note sul Machiavelli, Torino, 1948.

Some problems of the relationship *M-PR* in the socialist society. — The independent function of some (micro-) organizational systems also independent in their turn, within the prospects of the managerial ideology appears now in the light of *GOR*, in all its complexity, *as function of the functions* of social macro-systems. Any social-system — be it macro or micro — requires central, coordinating regulating activity, a guidance. The guidance (*Führung*) includes the managerial activity (i. e. the administrative, operative, coordinating, central regulating activity for the considered system).

Socialist revolution as well as the building of a new society require, as a matter of course, a centre, a sub-system (an activity specific to the global-system) and a partial-system (a functional social group) to exert the coordinating function.

Starting from some interpretations given by Fr. Engels[25] and V. I. Lenin[26] to some of Marx's theses, the Marxist, and particularly the non-Marxist literature, considers that the *state* as social sub-system of political and managerial (administrative) guidance, *will be gradually abolished.*

The thesis could be but hardly supported by convincing arguments in the conditions of the present day technological and scientifical revolution.[27]

However, in our opinion, neither permit Marx's texts of such a conclusion. Thus a well known paragraph in *Das Kapital* states that within the new society production will be submitted to a collective control (*gemeinschaftliche Kontrolle*), exerted by the producers themselves. Marx, by no means and nowhere asserts whether they will exert their control *directly* or through the machinery of a specialized body, certainly purged of bureaucracy of all kind.[28] Marx also tackles the same question in his study of the Commune of Paris.[29] This time he bore in his mind the following: "die Vernichtung *jener* Staatsmacht, welche sich für die Verkörperung dieser Einheit (i. e. der Nation) ausgab, aber *unabhängig und überlegen sein wollte gegenüber der Nation. . .*" (our underlining). The above mentioned text affirms the abolishment of *that* state power *alienated, strange from* the *nation* and overruling it, by fulfilling the regulating coordinative function from the positions of exploiting, privileged, oppressing classes and strata.

The application of scientific methods in the guiding activity imposes without any doubt, in our age of revolutionary transformation of science and technology, a highly qualified professional training of people working in this field. To contest, along this line, the maintenance of the state within the new society as well as the necessity of a qualified state apparatus means to promote incompetence and "amateurisme" even in such a vital problem. What must be abolished is bureaucratizing and alienation of the state apparatus and the class-substance of the state activity. However, even Marx believed in the "self-management of producers" only in the sense that *sovereignty issues from, and is exerted directly, by the whole socialist community of the nation*. At any rate he advocated the abolition of the *technological, highly scientified activity of social guidance*... When we recognize, that a hospital, a ship, a university have to be guided by a specialized, well prepared staff, all the more we have to admit that the hypercomplex system of society, including also the above mentioned forms of organizations or activities, needs a specialized guidance and management.

[25] Fr. Engels, Anti-Dühring (1876-1878), the final chapter.
[26] V. I. Lenin, Statul și revoluția (1917).
[27] The idea has been stressed in the sociological and politological literature in Roumania, first — after my knowledge — by A. Busuioc in a doctoral thesis, referred to in manuscript.
[28] K. Marx, Das Kapital, vol. III, chap. 48, section III.
[29] K. Marx, Der Bürgerkrieg in Frankreich (1871).

LIMITES DES NÉGOCIATIONS ET NÉGOCIATION DES LIMITES

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FRANCE

La négociation est une pratique sociale dont l'analyse nous paraît, comme celle de la décision, susceptible d'éclairer l'étude de l'action sociale.

Elle se réduit, si l'on sen tient à l'acception courante du terme, aux échanges explicites entre représentants de parties adverses visant à résoudre un conflit par voie de discussion. Elle est un moment de l'action dont les limites sont diversement appréciées selon le point de vue qu'on adopte.

Les conduites de négociation sont difficiles à observer, en raison des considérations de secret et difficiles à catégoriser, compte tenu de la grande variété des situations et des acteurs.

Notre pratique de l'intervention, effectuée le plus souvent en association avec des économistes et au sein de milieux sociaux très différents (État, entreprises industrielles, organisations professionnelles, organismes religieux, institutions pédagogiqies, familles), nous a permis de voir et de traiter de nombreux problèmes de négociation. Cette communication se propose de présenter quelques remarques sur la négociation considérée comme une relation de projet à projet.[1]

Après avoir exposé différentes formes de difficultés observées dans la pratique de la négociation, et leurs effets sur sa délimitation, nous chercherons à élucider un modèle analytique tiré d'une réflexion sur nos interventions et susceptible d'éclairer le sens de la négociation dans l'action sociale.

I — PROBLÈMES RENCONTRÉS DANS LA PRATIQUE DE LA NÉGOCIATION

Il ne s'agit pas ici d'établir une classification des problèmes de la négociation. Les indications relevées ne visent pas à l'exhaustivité, elles tendent seulement à montrer comment la pratique de la négociation peut être affectée dans sa cohérence et son efficacité.

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[1] Une version plus développée de ce travail a été publiée depuis le Congrès de Varna: Maria van Bockstaele et Pierrette Schein «Limites des négociations et négociation des limites» Sociologie du Travail, 1, 1971, 1—24.

1. Représentations normatives de la négociation

Les représentations idéologiques et normatives des rapports sociaux affectent la manière dont ils s'établissent bien qu'ils soient déterminés par bien d'autres facteurs. Ces représentations pèsent sur celles de la négociation. Le terme négociation, comme celui de décision, a des connotations multiples et contradictoires. Bien qu'étroitement associée à la notion de pouvoir, comme la décision, l'idée de négociation évoque une réalité sociale qui déborde l'idée de pouvoir. Considérée comme mode de résolution des tensions entre groupes d'acteurs, que ce soit entre États ou entre institutions, entre collectivités ou entre personnes, l'idée de négociation appelle traditionnellement l'idée de paix, de règlement par la parole et s'oppose à la guerre, au conflit, aux actions violentes, au divorce.

Ce contexte normatif de la société globale a marqué profondément l'emploi du terme pour ceux-là mêmes qui pratiquent la négociation, particultèrement au sein des milieux de pouvoir et qui manifestent à l'égard de la négociation une attitude ambivalente.

A l'encontre de la notion de décision en effet qui, dans ces milieux, est considérée comme un attribut dans tous les cas positif — le pouvoir décide, tranche, etc. . . —, la notion de négociation entraîne des réactions contradictoires. Ouvrir une négociation, c'est reconnaître l'existence d'un rapport de forces qui ne peut faire l'objet d'une décision unilatérale. Négocier, c'est risquer d'avouer une faiblesse ou de concéder inutilement un avantage.

En bref, la négociation limite le pouvoir. Dans cette optique, l'image noble de la négociation, associée à la paix, se brouille, c'est de marchandage qu'il s'agit.

Cette double image peut avoir pour effet de réduire la négociation à la prise de décision.

2. La réduction de la négociation à la prise de décision.

Dans cette perspective la négociation n'est plus qu'une autre modalité de prise de décision. Le fait que cette modalité soit associée à l'idée de marchandage et de concession conduit à restreindre les limites de la situation de négociation tout autant que son objet. On négociera le moins souvent possible sur le moins de choses possibles. Ainsi dans certains cas la discussion des procédures sera considérée soit comme un préalable qu'il faut supporter, qui fait perdre du temps, retardant inutilement le moment où sera traité le fond du problème, moment assimilé au début de la négociation, soit comme un moyen de retarder la mise en négociation d'une décision qu'on ne veut pas prendre. Dans ce dernier cas, les conduites procédurières ne sont pas toujours décryptées dans leur signification par rapport au fond, la négociation se réduit aux phases durant lesquelles se déroulent les relations hic et nunc entre représentants et seules sont prises en compte les décisions "finales" communes, souvent assimilées à la fin de la négociation. Les décisions et leur objet sont traitées comme seuls éléments significatifs de la situation.

Les limites de la négociation se trouvent réduites à l'objet ou à l'enjeu. L'enjeu présente aussi un caractère d'extériorité par rapport à l'acteur qui s'y réfère, conforme en cela à l'objet d'une décision qui est supposé clairement délimité.

3. L'extériorité de l'objet-enjeu.

L'objet-enjeu est délibérément posé comme devant être objectivement examiné, comme pouvant être rationnellement analysé, indépendamment de l'acteur. Dans ce but, dans les meilleurs cas, on le physicalise, on lui attribue des propriétés métrologiques et, avec l'aide d'experts, on le hausse si possible à la dignité d'objet scientifique ou rationnel.

Or cet objet-enjeu ne constitue souvent qu'une condensation, un lieu et un support privilégiés où s'accumulent les représentations qui débordent la définition formelle de la négociation ou la délimitation rationnelle de l'objet de la décision. Un lieu où peuvent, où pourraient s'observer des significations qui renvoient aux projets des acteurs comme nous y reviendrons ci-après.

Cet objet-enjeu est aussi abcès de fixation, possibilité de délimiter un champ, source de sécurité parce qu'il définit, pour un temps donné, un espace donné pour l'action. C'est ainsi que se prépare le moment où naît l'illusion du choix final, autrement dit où une limite va être fixée, d'un commun accord, pour un temps donné. Ce choix n'a de final que le nom puisqu'il porte généralement en germe le prochain conflit qui requèrera la négociation suivante. Néanmoins, dans le cadre du cloisonnement créé, on dira que la décision est prise, que la négociation a abouti à un accord, la double satisfaction des partenaires constituant le signe principal de la réussite.

L'objet-enjeu n'est-il vraiment que cette petite intersection de projets consciemment mise en discussion? Quel rôle joue dans la négociation ce qui en est délibérément soustrait?

La focalisation sur l'objet positivement choisi a pour conséquence d'occulter une partie du champ de la négociation et d'assimiler toute intervention jugée non pertinente à un brouillage qui empêche le message d'être clairement perçu.

4. La rupture entre finalités et pratiques.

L'objectivisme de ces pratiques conduit à exclure de l'examen les finalités de l'action. Le rêve de nombreux ingénieurs n'est-il pas souvent de voir la négociation assurée par les experts, dans un monde de rationalité où la biunivocité du langage porterait l'évidence partagée. Les négociations sur les nomenclatures en sont un exemple typique. La rupture entre finalités, représentations et pratiques y est consommée. La négociation est un champ clos au sein duquel il faut assurer le règne de la rationalité.

Face à l'objectivisme, on rencontre le moralisme qui suit la démarche inverse. Invoquant la bonne volonté des parties en présence, on recherche un accord sur les valeurs et les finalités en présupposant que le contenu des tâches en découlera automatiquement. Les désaccords sont tinterprêtés comme incompréhension, et la résolution des conflits requiert avant tout écoute mutuelle et compréhension humaine. Il faut évincer les meneurs et l'ayant fait, parler avec ceux qui partagent une vision similaire.

En niant la divergence des représentations, en évitant de percevoir les représentations non conformes (explicites ou implicites), et en excluant de prendre en compte leur genèse et leur rôle dans l'action sociale, objectivisme et moralisme sont conduits à rompre la relation entre finalités et pratiques, l'un dans

le but d'assurer la rationalité du discours, l'autre afin de maintenir la conformité idéologique. Enfin la dimension la plus couramment sous-estimée ou mal appréciée dans la négociation, c'est le temps, la continuité du projet.

5. Le temps ponctuel. La discontinuité du projet.

Chaque séquence de relations est en quelque sorte considérée comme un acte ponctuel, analysable en lui-même dans les limites qui lui ont été assignées. Cette séquence ne sera renouvelée que si un autre conflit surgit, dont le lien avec la précédente phase ne sera pas nécessairement pris en compte. Le processus de négociation est vécu comme une excroissance extérieure à l'action ordinaire de l'acteur. Le temps n'est pas vu comme un opérateur de transformation. Il est utilisé comme délai non comme durée. Il n'est pas géré, autrement dit, la négociation, en tant qu'acte ponctuel, manifeste la discontinuité du projet. Le projet n'est qu'une articulation successive de tâches, laquelle se différencie dans le temps par les modalités de sa mise en oeuvre.

II — PROBLÈMES POSÉS PAR LA DÉLIMIATION DE LA NÉGOCIATION

Dans son analyse de la guerre, Clausewitz souligne trois de ses caractères: elle n'est jamais un acte isolé, elle ne consiste pas en un seul coup sans durée, elle n'est jamais quelque chose d'absolu dans son résultat.[2]

Ces trois traits sont applicables à la négociation.

Dans cette perspective stratégique, la délimitation traditionnelle de la négociation, apparaît comme restreinte.

Nous voudrions aborder l'examen des limites de la négociation en montrant comment cette délimitation est affectée par la pratique et pourquoi elle doit être élargie.

Dans le maniement concret de relations et de contenus qu'implique une négociation, les conduites évoquées dans le paragraphe précédent coexistent et sont observables à un niveau manifeste. Mais le fait de leur utilisation à un moment plutôt qu'à un autre, dans un cas plutôt que dans un autre, requiert pour être saisi, une vision plus stratégique de la négociation et pour être compris un autre niveau d'interprétation.

Pour ce faire, il faut redéfinir les limites de la situation de négociation de telle sorte que l'interprétation du sens de l'action soit possible. Et il n'y a pas d'interprétation du sens possible si l'on restreint la négociation à une ou à des modalités de prise de décision pour une double raison:

— les décisions qui sont actées à l'issue d'une négociation ne sont qu'un aspect de ce qu'a produit la négociation. Réduire la négociation à la ratification[3] risque de conduire à une vision mécaniste et légaliste qui pose la décision comme opérateur de changement privilégié,

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[2] C. von Clausewitz «Da la guerre», trad. fr., Paris, 1955 (cf. p. 55—58).
[3] De même qu'il est dangereux ainsi que le souligne Galbraith de confondre décision et ratification si l'on veut comprendre la technostructure et les problèmes de planification. J. K. Galbraith «Le nouvel état industriel», Gallimard, Paris, 1967 (cf. p. 81 et 94).

— la négociation met en présence des représentants pour lesquels l'aboutissement à une décision ne concerne qu'un aspect de leur projet. Ceux-ci déterminent la part de leur projet qu'ils acceptent d'impliquer explicitement dans la négociation. Dire que le projet peut être volontairement tronqué sans qu'il en soit affecté risque de conduire à une vision volontariste qui pose le porteur comme conscient et maître absolu de son projet.

1. La décision considérée comme opérateur de changement privilégié.

L'action se définit dans ce cas comme une succession de décisions. Comment délimiter l'unité d'observation? Le fait qu'il existe une définition donnée par la pratique fonde-t-il à l'utiliser pour l'analyse de l'action? Tout acteur se trouve à tout moment devant une série d'éventualités et d'événements possibles auxquels il lui faut répondre par des comportements appropriés, c'est-à-dire choisir entre les réponses possibles et organiser ses ressources de telle sorte que soient obtenus les résultats escomptés. A quel moment rompre ce flux? Qu'est-ce qui permet de dire d'une décision qu'elle est finale? Quel critère utilise-t-on pour juger que tel moment d'un processus, dénommé ou non décision par les acteurs constitue une frontière véritable, en d'autres termes que le segment d'observation ou d'analyse possède un sens? Cette délimitation pour l'acteur n'est pas arbitraire, elle a un sens, c'est-à-dire vise certaines fins. On ne met pas en discussion n'importe quel objet, on le choisit, on le délimite, on le nomme „décision à prendre" mais on crée par ailleurs avant et après, compte tenu de l'issue attendue, les conditions nécessaires pour qu'elle soit prise. Autrement dit, la définition de la décision par les acteurs est une tautologie, on appelle décision sur ce quoi on a choisi de décider. Ce qui n'est pas mis en discussion est défini comme données de l'environnement, image des limites de l'action de l'acteur. La délimitation des décisions structure l'action d'une manière et d'une seule pour un acteur donné en fonction de ses objectifs et des finalités dans lesquelles ceux-ci s'inscrivent. Mais l'acteur, dans de nombreux cas, ne sait pas qu'il agit ainsi. Il s'aliène lui-même dans son action, prenant pour définition objective et rationnelle ce qui est définition téléologique. Ceci le fonde à considérer la décision comme opérateur de transformation. Les limites et les contenus des décisions sont précisément choisis pour orienter l'action dans le sens des visées de l'acteur; toute décision n'est que la médiation dont se sert l'acteur pour assurer le contrôle de son action et perpétuer son pouvoir.

Cette interaction entre délimitation des décisions et contrôle de l'action, du fait qu'elle dévoilerait les politiques de l'acteur si elle était effectivement prise en charge, est niée, ou déplacée. L'objet-enjeu de la négociation devient le lieu où se condensent ces interactions. Le refus de la relation entre politique et limites de la décision a pour effet de masquer la relation entre le porteur et son projet et d'en affecter la dynamique propre.

2. La rupture de la relation projet-porteur.

La mise entre parenthèses de la relation entre porteur et projet s'opère dans la négociation à des fins de protection des acteurs qui ne veulent dévoiler de leur politique que ce qu'ils veulent. Ils s'en tiennent à la discussion d'un objet-enjeu considéré comme extérieur certes mais défini de telle sorte qu'il ne déborde pas cette

volonté. L'acharnement à en débattre montre bien qu'il n'est pas seulement extérieur et qu'il concerne les projets en présence. Cette défense s'élabore dans la situation concrète où un porteur sent son projet exposé à l'action d'un autre porteur et éventuellement menacé par lui. La pratique habituelle de cette mise entre parenthèses de la relation interne projet-porteur peut entraîner son établissement de manière stable et conduire le porteur à perdre le contrôle de l'action.

Perdre le contrôle de l'action c'est ne plus accéder à la signification des tâches effectuées, c'est donc en même temps être privé de son pouvoir de cooptation, de sa capacité d'imaginer l'environnement et l'avenir. En dégradant le sens des tâches, en le réduisant à des déclarations formalistes le projet comme le porteur s'étiole. (On en trouve un exemple dans l'étiolement de certains partis politiques en France). Les projets qui se détériorent ainsi, perdent progressivement toute capacité d'intégration des écarts qui se produisent dans la réalisation de leurs performances. L'énergie qui demeure disponible est occupée à rechercher la justification des écarts qu'on ne peut pas ignorer; bien que la comparaison entre ce qui est attendu et ce qui est obtenu ne soit fondée que si mesure est faite de l'ex post après, et après seulement, qu'ait été explicité l'ex ante, on observe une reconstitution ex post de l'ex ante le plus apte à justifier les écarts observés. Ces tâches se substituent progressivement à celles qui maintiennent vivantes les relations entre finalités et pratiques et entre le porteur et son projet.

Cette relation projet-porteur est au coeur des interrogations concernant l'avenir des projets politiques. Dans le conflit qui a opposé R. Garaudy au Bureau politique du Parti Communiste Français la question était posée de savoir si la composition et les limites du groupe d'acteurs qui porte le projet communiste se sont transformées et quelles conséquences ces modifications du porteur peuvent avoir sur le projet et son avenir.

L'importance de l'apparition de projets révolutionnaires pro-chinois peut-elle être appréciée sans connaître les porteurs actuels et sans imaginer les porteurs potentiels? Cette imagination des porteurs potentiels suppose une vision du projet dans la phase actuelle mais aussi dans son devenir. Le pronostic ne peut être fait sans imaginer la transformation que le projet subira du fait d'être ainsi porté? Pourquoi et comment un projet porté par un petit groupe d'acteurs devient-il une vaste entreprise rassemblant de nombreux hommes? Comment le nombre se répercute-t-il sur la définition du projet et sur son développement? Comment l'institutionnalisation affecte-t-elle le porteur?

Nous n'avons relevé ces problèmes généraux que pour noter qu'ils se posent précisément dans les termes de relation réciproque projet-porteur. Bien que la formulation traduise surtout une préoccupation d'occurence d'événements, une saisie de conjoncture, elle met l'accent sur l'interaction projet-porteur. Comment saisir cette délimitation dynamique projet-porteur?

Avec cette question nous abordons l'approche analytique de la négociation.

III — ÉLÉMENTS D'UNE APPROCHE ANALYTIQUE
DE LA NÉGOCIATION ET DE L'ACTION

Nous avons vu que le problème des limites des négociations confronte l'acteur à la fois à son projet et aux autres acteurs portant projet. Nous avons vu également que les acteurs ont souvent tendance à réduire cette confrontation d'une manière délibérée. Nous avons noté qu'il n'était pas possible de réduire l'analyse ni à l'étude des dispositions formelles qui réglementent la négociation, ni à l'examen de l'objet-enjeu, ni aux déclarations des acteurs. D'un point de vue analytique le projet-porteur tout entier est impliqué dans toute négociation. Comment se construit cette implication totale? Quelle répercussion cette construction a-t-elle sur la délimitation du champ de discussion dans la vie politique?

1. Délimitation de la dynamique projet-porteur

L'action est un flux dans lequel les acteurs et leurs actes sont engagés comme opérateurs de transformations. Ce flux transforme des valeurs en buts, des buts en tâches, des tâches en opérations, des catégories en nomenclatures. Ces transformations s'opèrent par des itérations multiples entre ces divers éléments. De ces itérations naît un ensemble de représentations, de pratiques et de règles étroitement articulé, historiquement construit et qui échappe pour une grande part à la conscience des acteurs.

Il faut pénétrer au coeur de ces itérations pour comprendre la relation réciproque projet-porteur. Tout inventaire des buts et des tâches, tout recensement des hommes et des opérations, tout découpage de la réalité en catégories et en nomenclatures ne peut se comprendre hors des visées de l'action. Nous n'avons pas affaire à un ordre logique, mais à un ordre téléologique. Les buts conditionnent le choix des opérations et leur ordre. De ce fait toute opération est vécue comme investie des valeurs du but auquel elle concourt. Dans le même temps l'ordre et la réalisation des opérations promeuvent de nouvelles visions des buts qui peuvent modifier la représentation du projet par les porteurs. La hiérarchisation des hommes s'inscrit au coeur de cette relation valeurs-buts d'une part, tâches-opérations d'autre part, selon la manière dont ils participent à la détermination des premiers, à l'exécution des secondes et à la mise en oeuvre dynamique de leur interdépendance.

Ces processus ne sont pas accessibles dans leur totalité à la conscience des acteurs mais ils conditionnent leurs échanges. Les opérations afférentes à un projet donné et leur répartition entre les acteurs sont effectuées dans le cadre de règles dont une partie seulement est explicite. Le contrôle en est assuré selon des modalités qui visent à maintenir la hiérarchisation des tâches et des rôles et la structure du pouvoir et des statuts.

La réalité de ces mécanismes n'est rendue sensible aux acteurs que par les variations qui surviennent dans leur déroulement. Intervenant dans le flux de l'action, elles sont souvent assimilées à des erreurs de jugement ou à des fautes de comportement plutôt que prises en compte comme signes de l'état du couple projet-porteur. Ces variations sont source et objet de négociation. La sensibilité des acteurs aux variations, la capacité à rétablir ou à redéfinir l'équilibre des forces et la représentation que les acteurs se font de l'origine de l'écart et des moyens de la réduire déterminent des modes de négociation spécifiques.

Des facteurs culturels interviennent ici, dont une source réside dans les pratiques éducatives. L'apprentissage des conduites de négociation s'effectue d'abord dans la famille et à l'école. L'enfant comme l'élève est souvent considéré comme extérieur, réduit à l'état d'objet-enjeu d'une négociation propre au projet conjugal ou au projet scolaire : on décide pour lui, on choisit à sa place, on l'oriente. En général la remise en cause de cet équilibre s'effectue par la rupture, lent cheminement dans lequel s'intègre la suite des négociations avortées. Face au projet se construit un contre-projet disjoint, l'interaction réciproque constitue le coeur de la relation de négociation. Une articulation spécifique s'établit entre couple de projets-porteurs. Cette articulation peut être appréhendée analytiquement.

2. Relation de projet à projet.

Nous avons dit plus haut que les nombreuses itérations qui s'opèrent entre les éléments constitutifs du projet d'action produisaient un ensemble de représentations, de pratiques et de règles qui échappait pour une part à la conscience des acteurs.

C'est en cherchant à aider certains demandeurs, à élaborer leur projet que nous avons constaté que le travail analytique ne pouvait être limité à la prise en compte d'une relation projet-porteur unique. Tout projet est en effet situé dans un environnement constitué d'autres projets, de sorte qu'il est pratiquement impossible d'envisager une relation projet-porteur isolée, sans interaction avec une autre quelconque relation de même nature.

Nous avons exploré ce type d'interaction projets-porteurs sous forme d'intervention analytique en grandeur réelle et sous forme d'intervention analytique en simulation. Dans le premier cas, l'analyse de la relation de projet à projet, c'est-à-dire du jeu de dissimulation-dévoilement dans la construction et la gestion de la zone d'intersection entre projets, est effectuée directement ; dans le second, la construction et la gestion de cette zone s'effectue en déplacement sur notre propre groupe. C'est le maniement de ce déplacement qui nous a inspiré le recours, repris ci-après, à une formulation en termes de "transfert sociologique"[4].

Ces deux démarches nous ont permis de mieux circonscrire la forme de négociation que constitue toute relation de projet à projet.

Nous partirons d'une description simplifiée de la situation de relation de projet à projet considérée du point de vue d'un porteur particulier: (a) Quel est notre projet? (b) Quel est leur projet? (Représentations directes) (c) Quel projet nous attribuent-ils ? (d) Quel projet s'attribuent-ils? (Représentations attribuées).

Ces questions appellent d'abord deux remarques. D'une part, elles font apparaître deux niveaux de représentations: les deux premières concernant des représentations directes des projets, les deux dernières des représentations au second degré puisqu'elles sont relatives aux représentations de l'autre porteur. Du point de vue d'une description externe de la situation, ces deux niveaux ne sont pas réductibles l'un à l'autre: on ne peut assimiler la représentation (a) qu'un porteur

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[4] Jacques et Maria van Bockstaele, Colette Barrot, Jacques Malbos et Pierrette Schein «Nouvelles observations sur la définition de la socianalyse», L'Année Sociologique, 19, 1968, 279—295.

se fait de son projet à ce qu'il imagine (c) que l'autre porteur s'en fait; de même il n'est pas possible d'assimiler la représentation (b) qu'un porteur se fait du projet de l'autre à celle qu'il imagine (d) que l'autre porteur s'en fait lui-même.

D'autre part, ces questions sont en interaction: la réponse à l'une peut entraîner une modification de la réponse à une autre. Ainsi l'acteur qui définit son projet (a) et qui se demande concomitamment quel projet on lui attribue (c), peut modifier son projet compte tenu de l'idée qu'il attribue à l'interlocuteur. De même, le fait de définir le projet de l'autre (b) peut induire une modification sinon une assimilation à l'identique de la définition que l'autre donne lui-même de son projet (d).

Ces relations fines entre les représentations d'un acteur manifestent la présence au coeur de tout projet du projet de l'autre. De ce fait, en tant que relation de projet à projet, l'objet de la négociation ne peut présenter ce caractère d'extériorité analisé précédemment et l'absence d'interactions hic et nunc entre les négociateurs ne peut interrompre le processus de la négociation qui demeure permanent et s'inscrit dans une durée propre au projet.

Deux conséquences en découlent. D'une part les substitutions entre les niveaux de représentations et les amalgames entre représentations directes et représentations attribuées ou imaginées sont produites par l'existence de l'interaction entre projets. L'acteur ne choisit pas comme il le veut ses représentations, ce sont des données de l'interaction entre les projets et les porteurs. Et ces données, seconde conséquence, déterminant les représentations, affectent à leur tour la relation projet-porteur et les images de la relation projet-porteur des autres. En particulier la transformation, inconsciente pour l'acteur, de représentations imaginaires en représentations directes restreint la capacité de l'acteur à contrôler son projet d'action et à anticiper le projet de l'autre tant sur le plan de leurs contenus (valeurs, buts, opérations) que sur celui de leur assise sociale respective (porteurs).

Ce jeu d'interactions entre projets fait partie intégrante de l'action sociale. Il est au coeur du rapport de force social. Tout mouvement social peut être considéré comme un affrontement de projets qui met en oeuvre à la fois des déplacements d'énergie et des déplacements de significations. La capacité des pouvoirs en présence à contrôler ces déplacements assure l'équilibre des rapports de force. Toute perte de contrôle, toute appréciation erronée du jeu d'interactions affectent l'équilibre des pouvoirs et remettent en cause les limites des projets et des porteurs.

Lorsque le pouvoir n'a plus la capacité de mobiliser l'énergie sociale et de porter les significations de l'action, autrement dit lorsque les projets d'action ne sont plus capables de créer cette relation nourricière entre les pratiques et les règles d'une part et d'autre part leur transcription symbolique dans les représentations imaginaires et les images utopiques, les lieux d'investissement énergétique et symbolique se déplacent. Nous avons nommé ce déplacement, seule réponse possible à ce vacuum que rencontrent les forces sociales, "transfert sociologique". Opérer un transfert pour un acteur social, c'est substituer, dans la relation projet-porteur à ces représentations du réel, vidées de sens en raison de l'absence d'un pouvoir qui les supporte, un ensemble de représentations imaginaires et d'images utopiques. Cette substitution s'effectue sans confrontation avec le réel. Il en résulte une transposition terme à terme de pratiques et de règles considérées comme modèle idéal puisqu'elles ont le pouvoir d'actualiser ailleurs l'utopie sociale.

Ces représentations imaginaires ne sont pas le résultat d'une agrégation volontaire de représentations individuelles construites par consensus. Il s'agit de repré-

sentations collectives produites par l'action elle-même, qui sont constitutives de la relation projet-porteur et ne sont pas objet de décision. Ces représentations se sont élaborées au cours d'un processus historique et leur genèse échappe de ce fait à l'observation directe. Il est nécessaire de les décrypter dans la conduite inconsciente de l'acteur à l'aide de procédés indirects, tel celui que nous avons signalé.

Toute atteinte à cette zone transférentielle de représentations est en effet proscrite. C'est une zone de nature utopique, charismatique et tabou. Mais il s'agit d'une utopie vécue, orientant le projet non pas intellectuellement mais concrètement et moralement. Dans ces conditions, considérer ces représentations comme transférentielles, c'est-à-dire comme des représentations imaginaires et non pas comme des représentations réelles, constitue une entreprise qui confine au sacrilège ou à l'exorcisme.

Toute tentative réformatrice ou révolutionnaire véritable attente à cette zone transférentielle, en essayant de faire évoluer ou au contraire de détruire la légitimité des bases de ces représentations.

Toute négociation est confrontée à cette limite. Soit cette zone de représentations est respectée, chaque acteur tenant compte par un contrôle de ses propres niveaux de représentations de l'existence réciproque de tels niveaux et d'une telle zone chez les autres acteurs en cause, soit ces limites ne sont pas reconnues pour telles, chaque acteur ignorant ou refusant ce contrôle. Dans le premier cas le statuquo social se maintient dans un accord tacite, dans le second il est mis en question et l'issue dépend du rapport de forces. Pour engager cette remise en cause comme pour maintenir l'accord tacite, les acteurs par une négociation permanente sont placés dans l'obligation de manier le transfert et doivent en avoir la capacité. Cette capacité de mobiliser, de construire, de déplacer ou de détruire les représentations imaginaires est l'objet-enjeu réel de la négociation puisqu'il légitime en fin de compte le pouvoir.

Nous n'avons pas dans ce texte directement abordé des cas concrets d'analyse en raison notamment des obstatcles liés au secret des négociations.

Nous essayons de discerner des preuves cliniques de l'applicabilité de ce modèle en nous efforçant d'apprécier le développement de la capacité stratégique des acteurs avec lesquels nous travaillons.[5]

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[5] Jacques et Maria van Bockstaele, Marcel Moiroud, Jean-Claude Fournout et Jean Grandclerc, «La capacité stratégique» Paris, Délégation générale à la Recherche Scientifique et Technique, 1965, polycopié, 280 p.

ON THE SOCIO-ECONOMIC CONDITIONALITY
OF POWER STRUCTURES IN THE PROCESS
OF SOCIAL DECISION

MANFRED LÖTSCH

GDR

If the object of planning is not considered as small and therefore easily surveyable sub-units but either as large social sub-systems or even society as a whole, it is evident from the beginning that the solution of planning problems involves a large number of difficulties. In order for example, to make efficient planning of the national economy possible, the immense quantity of economic processes which are interdependent in a manifold and complex manner have to be registered in a system of exact data and to be assessed according to precisely defined criteria. If we first, abstract from the fact that in all planning a system of social interests — of whatever kind — is always followed and realized and if we consider planning provisionally as a technical organizational process, the problem seems to consist in the following: the more comprehensive the field to be planned and the longer the periods which are to be planned, the larger is the quantity of information to be processed and the more complex its structure. Or in other words: In the light of practical feasibility and practical control the problem of planning seems to be a problem of information processing.[1]

In bourgeois literature (but more in futurological than in sociological literature in the narrower sense) the problem, however, has largely assumed the form that it mainly or only concerns the gathering and processing of information. Karl Steinbuch, for example, who incidentally to the degree that he replaced the criticism of present capitalist society by an apologetic for it became the leading futurologist of the West German Federal Republic, sees in it the basic problem in general: "The story of the building of the tower of Badel shows that a functioning technique of information is the prerequisite for a functioning society. Information is the beginning and foundation of society."[2]

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[1] Marxist scientists also urgently point out the importance of this way of formulating the question.

Cf. Berg/Tschernjak, Information und Leitung (Information and Management), Dietz Verlag, Berlin, 1968.

[2] Karl Steinbuch, Die informierte Gesellschaft (The Informed Society). In: Perspektiven für das letzte Drittel des 20. Jahrhunderts (Perspectives for the last Third of the 20th Century). W. Kohlhammer Verlag, Stuttgart, (West) Berlin, Gologne, Mainz, 1968, p. 95.

Let us disregard the fact that even a fleeting glance at real history instead of referring to biblical-allegorical history would show that not information but material production is the foundation of society, and follow Steinbuch's arguments a little further, simply because his ideas represent an entire direction of futurology and, in addition, an especially typical model of society.

If the functional proficiency of a society is determined by the efficiency of its information technique, it is only logical to consider defects in society as defects in the information system. Based on this prerequisite, the optimization of society, at least in principle, seems to be amazingly simple. It is only a question of establishing an efficient system of information. Or, put differently: In Steinbuch's view the problem of rational planning is reduced to a rational technique of information: "The information technique is a strong weapon against the irrationality of political actions."[3] In a similar but much more comprehensive sense Wiener and Kahn consider "the general control of society on the basis of cybernetics"[4] as one of the main characteristics of the so-called post-industrial society. Finally, it is Brzezinski who quite frankly expresses the final aim of this concept: In Socialist society computers and technical information systems should replace the Central Commitee (i. e., the leading role of the party of the working class).[5]

To return to Steinbuch: What is first conspicuous about his argumentation is the absolute representation of information as the primary foundation of social system. It would go far beyond the scope of this contribution to explain from the point of view of a general theoretical system that the analysis of systems requires a more comprehensive initial position integrating the structure-behaviour correlate and that the analysis of the structure of the flow of information is given the correct sense only within the framework of such a superordinate system of reference. From the beginning we formulate the problem more specifically and start from the fact that information cannot be the "beginning and foundation" of society but acts as an instrument to it, as an intermediary process, the effective principles of which can only be understood on the basis of the general effective principles of society as a whole. Steinbuch seems to feel the illogic of his argumentation himself, for at the end information seems to change for him from the beginnig and foundation of society into a dependent process which is a priori not understandable at all: "The value systems of the programmers are necessarily included in these processes (of information processing — M. L.). The enormous social effect of the perfect information systems will provide the value systems of the programmers with a hitherto unimaginable effect."[6]

Therefore we note that the concept of the "informed society" for which Steinbuch is only a typical representative, reduces the problem of the rationality of social

[3] Geplante Zukunft? Aufgaben für Politik und Wissenschaft (Planned Future? Tasks for Politics and Science). Edited by Waldemar von Knoeringen, Verlag für Literatur und Zeitgeschehen, Hannover, 1968, p. 25.

[4] Herman Kahn/Anthony Wiener, Ihr werdet es erleben. Voraussagen der Wissenschaft bis zum Jahr 2000 (The year 2000. A famework for Speculations on the Next Thirty-Three Years), Verlag Fritz Molden, Vienna, Munich, Zürich, p. 175.

[5] Z. Brzezinski, Entspannungspolitik im Schatten Prags (The Policy of Relaxation in the Shadow of Prague). In: Das 198. Jahrzehnt. Eine Team-Prognose für 1970 bis 1980 (The 198th Decade. A Team Prognosis for 1970 to 1980), Christian Wegner Verlag, Hamburg, 1969, p. 54.

[6] Karl Steinbuch, op. cit., p. 116.

planning to information technique. The conjuring up of data banks, perfect compu-
ters and other efficient instruments of information processing, however, is simply
not suitable as an approach to the problem because information technique is not
an autonomously operating mechanism but a means of production, i. e., a means
of production of a special kind, a means for producing information. Even the simple
question of who the programmers are whose value systems obtain an unimagin-
able effect shows that in the abovedescribed initial position the problem is hidden
behind a smoke-screen rather than correctly formulated.

At a discussion of experts at the Executive Committee of the Social Demo-
cratic Party Bahrdt opposed Steinbuch's position as follows: "It must certainly
be taken into consideration that the possession of information implies power, that
to possess information and to withhold it from other groups is an interest of the
various groups, that certain groups have these monopoly wishes and other groups
other monopoly wishes and that in the final analysis, it does not rarely happen
that certain groups prefer not to know anything about things closely associated
with them, if their own non-knowledge also prevents other from knowing about it.

This means that the construction of large centralized information systems
with all the technical trimmings is, from the very outset, embedded in many dif-
ferent power struggles by interest groups."[7] Indeed: Let us take a problem that
may justly be called one of the basic problems of mankind today: the at present
(and, in all probability, also in the future) increasing discrepancy between the growth
of the world population and the increase in the production of food. It may be con-
sidered as proved that this is a manifestation of a non-functioning society, for from
the point of view of natural science and technology the problem can be solved with
the prerequisites of today in the shortest possible time. But if on the one hand in
the so-called highly developed countries of the West masses of food are destroyed
and huge production capacities are laid fallow under the protection and with the
economic promotion of the state, whereas on the other hand day by day thousands
of people die of hunger, this is not the result of an inadequate information system
but the logical and consistent consequence of a society whose basic law is not hu-
man welfare but profit. And conversely: The problem cannot be solved by the
construction of perfected information systems but only by a fundamental upheav-
al of the basic economic interest structures, and that can be done only in a revolu-
tionary way.

Compared with the pseudo-cybernetic or, more precisely, technocratic, and
carefully avoiding any way of looking at the concept of the "informed society"
with any essential social reference, the statement of Bahrdt is, no doubt, some-
what more realistic, not in the sense that answers the problem but, at best, inso-
far as it indicates the way of correctly stating the question. The manner, however,
in which Bahrdt continues his idea is rather unsatisfactory: "I think if democracy
is not to be lost sight of in this development, then a balance of power between the
various factors must be borne in mind, which need not necessarily look like that
designed by Montesquieu, but which may be structured somewhat differently today."[8]

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[7] Hans-Paul B a h r d t, in: Geplante Zukunft, op. cit., pp. 45 f.
[8] Bahrdt, op. cit., p. 46.

In my opinion, the offer of a "balance of power" is, in view of the real problems, too modest. To return to the above-mentioned problem: The basic defect in the relations between highly developed capitalist countries and the developing countries is not the insufficient developed "balance of power" or "equilibruim of forces". Its essential content lies in the fact that, firstly, the ruling class of the developed capitalist industrial countries has no interest at all in the developing countries freeing themselves from their economic backwardness, and that, secondly, it employs all its might to prevent a development of the productive forces corresponding to the objective requirements. The essence of this conflict lies in the fundamental divergence of interests, and there is no progress if the behaviour of the monopoly bourgeoisie is paraphrased in a way which is as "free of value judgements" as possible. On the contrary, it is the theoretical task to throw light upon the economic and historical foundations as the basis of the essential social antagonisms in order and that is, after all, decisive — to reveal the way to overcoming them. This, however, presupposes a sociological conception which is on the side of social progress without reservation, i. e., a conception which is committed to the working class and all other progressive forces, very much in contrast to a sociology which claims to be neutral to value judgements but which in reality is not so at all. The authors of non-Marxist literature start from the idea of pluralism whenever power structures in the present society are to be explained. We only want to mention Peter Drucker here as an axample. He considers this idea even to be the decisive basis of social theory in general: "If a social theory is to be meaningful at all, it must start from the real factor of a pluralism of institutions. . . A theory of the society of organizations would have to be based on the interdependence of the organizations."[9] Let us continue to follow the prerequisites and consequences of the pluralisitic conception and first formulate the thesis that pluralism, firstly, with the prerequisite of power structures organized according to the division of labour assumes as given what is to be investigated, and secondly, that it from the beginning replaces critical analysis with a fundamental apologetic. But such an analysis, starting in this way, makes it necessary to go beyond the mechanism of planning and advance to its social content and nature. The nature of social planning is, in general, the formulation of development aims to be striven for and the stipulation of the means for reaching these aims. The question of the connection between power and planning is thus, for the time being, reduced to two questions:

— Firstly: How do these aims come about?

— Secondly: On what does the selection of the ways and means for reaching these aims depend?

At first, it is evident that social development aims are by nature multi-dimensional. The problem is always the selection from a more or less broad spectrum of possibilities: ideally, the optimum variant is to be found. Or, in other words: The basic problem of scientific planning is the problem of rationality, the securing of the optimum selection. Here, in this connection, the question of the efficiency of the modern methods of information processing has its sense, because from the view of the formal-technical mastery of planning processes the finding of the opti-

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[9] Peter Drucker, Die Zukunft bewältigen (Coping with the Future), Econ Verlag, Düsseldorf, Vienna, 1969, p. 224 f.

mum variant depends, of course, on the fact that this variant first enters into the selection process. The modern methods of information processing decisively increase the wealth of information processing and thus constitute an essential basis of optimization. But, and this is of decisive importance, the information technique alone and without prerequisites does not guarantee optimization at all; it is at best a necessary but by no means sufficient condition.

To the extent that there are antagonistic interests in a society, the selection of the aims to be striven for is made via the struggle between the objective representative of these interests: Within the framework of capitalist society the proletariat struggles against exploitation and oppression, for social security and a rising standard of living, whereas the monopoly bourgeoisie subordinates the selection of every concrete individual aim to its general aim of profit maximization.

Starting from this statement, which is as simple as it is incontestable, it is apparent that the given power structure of society is the basis of the planning process. If there is antagonistic opposition, rationality does not generally decide on the course of planning but the following connection. Those aims are selected which correspond to the interests of those groups which have the power to force a selection which corresponds to their interests. In class society the principle of rationality is subordinated to class interests. The concept of pluralism now understands the antagonism between the classes under the same system of reference as the conflict between two rival monopoly associations, and the general proposal of a "balance of power" is then to be valid in the same way for the relationship between state and monopolies as for the relations between the bourgeoisie and proletariat. Disregarding for the moment the fact that the reality of capitalist society has so far not proved the practicability of this proposal, let us consider the methodological prerequisites of this concept. The pluralistic concept in the final analysis amounts to saying that political power structures and conflicts are considered as given phenomena and are finally only described, but their fundamentals are not investigated. The decisive result, which ultimately counts, is the fundamental defence of the existing power structure of capitalist society, and any criticism of details is aimed only at a partial improvement. [10]

Let us return to the original starting point so that we can examine this problem somewhat more closely. The concept of the "informed society" shall be asked a question, which is as simple as it is far-reaching: In whose hand are the modern means of information processing and whose aims are uncluded in the programs of the computers?

Nobody will be able to dispute that computers are, in the final analysis, nothing but specific means of production. Consequently, their programs are not simply made up, as Steinbuch inconsistently assumes, from the value conceptions of the programmers but from the value conceptions of the owners who, in turn, program the programmers. That the ownership of the modern means of information processing (they are, no doubt, power-increasing factors) will not constitute a new kind of pluralism follows from the again very simple consideration that only those who have the necessary financial potential come into possession of these means: the owners of the "traditional" means of production.

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[10] Cf. Drucker, op. cit., pp. 270 ff.

It follows that an analysis of power structures in the social planning process leads to insights into inner, essential connections only if the starting point is the connection between economic and political power. But even this statement, already in this form exposing important shortcomings of the pluralistic conception, is still insufficient: Economic power and political power do not stand alongside each other with same rank, and they do not act towards each other as autonomous spheres. By nature, political power is nothing but an expression of economic power; the power of every ruling class is based on the ownership of the means of production. The example considered above proves this with sufficient clearness.

Now it is clear right from the outset that the aim, content and course of social planning processes are determined by the given power structures which are, in turn, an expression of economic relations. At first, the objective economic relations manifest themselves as interests, and it depends on the available power to which degree these interests can be pursued and realized. Whether in social planning processes social or egoistic group interests are pursued is therefore determined by whether and to what degree the interests of the ruling class coincide with the interests of the whole of society. It is conceivable, but so far has not been proved, that under conditions of the private ownership of the means of production social planning may be realized in such a way that society is the *object* of planning, thus it cannot be excluded from the outset that processes of the whole of society are included in the planning mechanisms of the capitalist state. But it would be utterly wrong to declare that this is social planning and to derive from it a tendency for capitalism and socialism to converge for the decisive antagonism between the two systems is, so far as the problem of planning is concerned, not their mechanism but their content. From the fact that private ownership of necessity produces private interests and at the same time includes the power to pursue these interests, it inevitably follows that planning only pursues the interests of the private owners. Under such conditions society may well be the object but cannot, for fundamental reasons, be the *aim* and *subject* of planning.

Or, in other words: The extension of planning mechanisms to the whole of society simply does not constitute social planning, because the monopoly bourgeoisie for objective reasons is not in a position to behave otherwise than in accordance with its historical origin and its position in the system of social production. The pursuit of egoistic class aims, because of a given historical determination which is at the same time immanent to the system, is inseparably connected with the nature of this class — also and just when these egoistic aims are loudly and fraudulently altered into social requirements.

Today perhaps nobody seriously disputes the scientific finding that in the capitalist industrial countries important trends in the productive forces profoundly collide with social needs: Technically perfected visions of the future are in flagrant contradiction to unsolved social problems; the destruction of huge quanities of food in the presence of threatening starvation; a number of "modern big cities" have already today reached the margin of uninhabitableness, e. g., from air pollution; a leading American biologist recently stated that the destruction of the environment will reach the "point of no return" in about 25 or 30 years; since 1946, the USA has spent four billion dollars for armament, whereas in the country itself millions of people are living below the existence minimum; the whole bourgeois futurology is fascinated by the efficiency of the technology of the future but does

not know how to answer the question of man's role in a society largely based on far-reaching automation. This is only an enumeration of a few conflicts from a host of really existing conflicts.[11] A striking example of the conflict between monopoly capitalist objectives and the modern productive forces is the "prognosis" of Professor Holste, the development head of the Volkswagen works: The producing and sale of cars will continue even if the federal citizens are already hemmed in bumper to bumper on the autobahns.[12] But, and this is important, such objectives are not simply absurd; on the contrary, they are perfectly logical within the framework of a way of thinking oriented only on the realization of profit. The deeper sense of the whole problem is the historically inseparable connection of the bourgeoisie with an economic system based on the private ownership of the means of production and regulated and determined by corresponding objectives. Critical and reasonable scientists conjure up the necessity of a completely new way of thinking as the only basis for coping with the future, but this amounts, strictly speaking, to squaring the circle, i. e., to the demand that the bourgeoisie based on private property should produce a way of thinking contrary to private property. This means demanding, that a bourgeoisie behave otherwise than as a bourgeoisie.

The way out usually offered, that scientists and experts would therefore have to take over the direction of society, is in reality a false way: As social power has its deeper roots in economic power, Daniel Bell's "practicians of the new intellectual technology" are, by nature, nothing but executive organs of the ruling class. "Again and again we return to the question: Who has the power?," said one of the "technocrats" of the American General Electric trust.[13]

Certainly, the concept of pluralism may be conceded to reflect a real problem: the increasing complexity of power structures in present capitalist society. Under the conditions of the scientific and technological revolution the ruling class cannot but continue the division of labour in the exercise of power. We leave out of account the problems it may cause for the ruling class itself; here we only want to point out that pluralism is subject to the fallacy of the theory of cognition that takes the manifestation for the essence of the matter. It is a matter of fact that the significance of science and management in the process of social decision is growing; but in order to give a real explanation of the power structure of present capitalist society, pluralism would have to prove that science and management replace economic power. The simple and incontestable fact that objectives, apparently meaningful and necessary from a scientific point of view, can never assert themselves if they run counter to the interest of monopoly capitalism is a perfect rebuttal. The access to the question "Who has the power?" is not opened up by the description of external manifestations. The exponential growth of scientific manpower in present-day society may be somewhat attractive, but to the degree to which it is played up as the essence of the matter, real access is barred: the analysis of the economic power structure of society.

To sum up what has been said: If the concept of pluralism turns out to be unsuitable even with respect to capitalist society, it is all the more so when speaking of socialist society. The general ground for this statement is that a socio-econo-

11 Cf. Ritt auf dem Tiger (Ride on the Tiger). In : Der Spiegel, Berlin Edition, 5 January 1970, pp. 34 ff.
12 Ibid., p. 42.
13 Ibid., p. 46.

mically uniform basis of necessity produces an isomorphic power structure: The social ownership of the means of production inevitably corresponds to the political power of the working class and the working people allied with it.

These two characteristic features of socialist society are the decisive prerequisites for the fact that the aims pursued in the planning process completely coincide with the interests of the whole of society. Only in this way is society at the same time object, subject and aim of planning, i. e., planning is directed at the whole of society in the sense that there are no sub-spheres which are purposefully organized, but the complexity of society as a system, and in the sense that the aims pursued are aims of the whole of society.

From the fundamental dependence of the content and the mechanisms of planning on social relations it follows that the problems faced by socialist society are qualitatively different from those of capitalist society. Whereas the West German employers and employers' associations, for example, do their utmost to refuse the demands of the trade unions for co-determination as whereas the trade unions in this struggle so far have not scored any substantial success, we face a completely contrary problem: of including all working people as extensively as possible in planning and management.

The general situation of the problem is as follows: It is in the nature of social planning that in its execution social aims and interests as a whole are worked out and realized. From this it follows that the safeguarding of the will of the whole of society must be connected organically with the participation of all working people in planning and management.

Technocratic concepts with respect to socialist society — of whatever type — assume that this problem cannot be solved in principle. It is assumed that if specific organs are entrusted with the power to guarantee the execution of more comprehensive objectives this power becomes independent of society and consolidates itself as domination.[14]

It is difficult not to reproach this assertion with ignorance, and that for at least two reasons:

Firstly, the problem mentioned has been solved theoretically, namely, with the principle of democratic centralism worked out by Lenin, and secondly, this principle has long since proved its efficiency. The basic idea of democratic centralism is the organic connection of the will of the whole of society with the individual responsibility of the socialist commodity producers and the territorial units. The assumption that social planning is ultimately nothing but a kind economy operated by state commands ignores the whole living reality of the development of socialist society whose economic stability and prosperity is based not least on the very effectiveness of social planning. At the same time this assumption is theoretically shallow; social planning is simply defamed but its nature is not examined. In a serious approach to this theoretical task it is not difficult to ascertain the nature of social planning: It is the development and binding stipulation of the socially optimum aims of development. Then the individual operating units are not really independent *in spite of* planning, but, strictly speaking, *because* of it: The more exactly social optima are defined, the greater the security of the orientation of the

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[14] To mention only one example out of a vast number: Peter Christian Ludz, Die Entwicklung der DDR (The Development of the GDR), in: Das 198. Jahrzehnt (The 198th Decade), op.. cit., pp. 213 ff.

operation of each economic units from the beginning on the correct aims, and the greater the security of avoiding having economic actions *appear* to the individual enterprise as effective, but which in reality are not so from the social point of view. Or, in other words: The "freedom", which is often conjured up in this connection, does not consist in the "dream of independence" of objective laws, "but in the knowledge of these laws, and in the possibility this gives of systematically making them work towards definite ends... Freedom of the will therefore means nothing but the capacity to make decisions with knowledge of the subject."[15]

This comprehensive connection must be the starting point if the question of the role and the possibilities of the individual within a society based on planning is to be put correctly and answered successfully. Then it is only a matter of the logically consistent continuation to arrive at the insight that planning not only allows free, consciously directed acting but in the strict sense first makes it possible at all and requires it because then the action takes place within the framework of optimum social objectives. But it should be emphasized once again that is true only of really social planning, i. e., planning in which society is the object and aim of planning at the same time. Only then, under the prerequisite of the social ownership of the means of production and the political power of the working people, does society also become the entire subject of planning, is planning borne by all members of the society. Here it is impossible to describe even approximately the system of institutions which has been developed in our society for the all-round inclusion of all working people in planning and management; it extends from institutions of the whole of society, such as the Scientific Council, to a carefully coordinated system of institutions on the level of the enterprise and communal units. Millions of working people take an active part in them; their exact determination is somewhat difficult for us because of the manifold forms of the co-operation of the working people.[16]

The social character of the process of decision-making under socialism is thus at the same time the practical reductio ad absurdum of all technocratic conceptions with respect to socialist society. If, as presupposed in these conception, each vertically organized decision process of necessity leads to the rule of the persons concerned under socialism every worker who is consciously acting for society, every member of production committees, councils of innovators, voluntary commissions, etc., would have to be assigned to technocracy, simply because he executes actions and makes decisions influencing the actions of other people. To the degree to which all working people are included in planning and management, and this is our declared aim, logically the whole of society would in the end have to merge into technocracy.

The general conclusion which we deduce from all that has been said is that the understanding of the nature of social planning arises only out of the understanding of the relations of production, and that planning is not to be understood simply as a mechanism but as a process determined in its content by the structure of the relations of property and power.

[15] Frederick Engels: Anti-Dühring, Foreign Languages Publishing House, Moscow, 1959, p. 157.
[16] To give only a few figures: In our society there are 200,000 deputies, 300,000 members of permanent production councils, 100,000 women in 13,000 women's commissions, 35,000 young people in 6,000 youth commissions, 500,000 members of 7,000 commissions of the Workers' and Farmer's Inspection, and many more.

ACTS OF SOCIAL ADMINISTRATION AND THE
ATTITUDE OF MEMBERS OF SOCIETY TO THEM

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Interrelation between power and public can be discussed from two sides. On the one hand — how public, people influences on the power (how the power takes into account the public opinion). On the other hand — how people respond to the activities of power, of authorities.

And very important problem for the empirical research is the finding out of how people respond to the power's acts. All such acts, any actions of social authority we can name acts of social administration.

Social power being different in various social systems if regarded in a broad sociological meaning is represented by the state the form of which pertains to the given social regime, its developed apparatus, political non-state organizations supporting this social political system. In society with private and various kinds of group property the owners and administrative bodies of corresponding production and economic units also included in the structure of this social power. This power as a whole and its elements (in this case — within the limits of certain competence) exercises administration according to its social nature and the goals, stipulated by this nature. This means that power maintains a given social order and introduces in it the necessary changes, influencing in some way or other the people's behavior, social status and the system of relationships.

Any act of social administration as long as it aims at influencing people's behavior and social status, inevitably initiates in the people a certain attitude to itself. This attitude apparently may be positive (from passive support up to the active striving for realization of the act), or negative (with various degree of opposition to the act), or indifferent. It is clear that the more positive is the attitude of people to the social power bodies' activities, the less efforts are required for the realization of the goals of administration and the more efficient the administration is.

What are the factors that influence formation of a positive attitude of people to the acts of administration? First of all it is correspondence of the acts of administration to the interests of those administrated, in what direction and in what degree they affect the interests of people and social groups. If there is correspondence between the goals and hence between the acts of administration and the people's interests, if other conditions remain normal, a positive attitude of the people will be formed. The more favourable conditions are provided by the acts of power

for realization of interests, the greater will be the degree of activity characterizing this positive attitude. Formation of such attitude among the entire masses of the administrated people or at least among their overwhelming majority, requires unity of interests within these masses.

The fundamental objective pre-conditions which make it possible for the acts of administration to express common interests and therefore engender positive attitude to themselves among all, or at least among the overwhelming majority of the society members, may be created only when causes of antagonism of interests of people and social groups are eliminated (e. g. private property), along with this it is important to ensure that organization and functioning of social power at all its levels are based on the principles of genuine democracy. It is exactly upon these principles that the socialist society, its social structure, public power and relationships of power with the people can and should be built. V. I. Lenin taught that under socialism it is possible and necessary to rule "not by dividing as ancient Rome's harsh maxim required, but by uniting all the working people with the unbreakable bonds of living interests."[1]

When social power and the state express the will of the overwhelming majority and of the whole people, joined by the unity of vital interests, appear the necessary objective reasons for the masses' supporting the power actions. V. I. Lenin taught that this conscious support rendered by the people is the source of strength of social power under socialism and its efficiency. V. I. Lenin pointed out that a socialist state as distinct from the exploiting state protecting the privileges of the ruling minority, "is strong when the people know everything, can form an opinion of everything, and do everything consciously".[2]

To what extent is the positive attitude to the acts of social administration ensured at present in Soviet socialist society? Is this attitude universal in every case? This question cannot be answered simply as: empirical data show that it is necessary to consider separately the attitude to two groups of these acts.

The first group of acts includes various manifestations of activities of the supreme social power pertaining to the most essential questions of organization of the entire society's life. To these belong the directive instructions given by the Communist Party, officially occupying the leading position in the whole system of social administration, the laws and other acts of the surpeme state bodies. These acts are often issued jointly or in agreement with the trade unions and other mass public organizations.

The second group includes acts of separate administrating bodies of the medium and lower levels, individual officials, i. e. representatives of power.

Considering the first group of acts we see people's positive attitude to them, practically on a general scale because there are all the main conditions in our society today for the formation of such attitude. The interests of all the social groups are objectively common. On the other hand, analysis of the contents and trends of these actions, currently taken by the Party and State, shows that they fall into line with the basic interests of the people. Analysing these actions, one can make no reservation regarding this general evaluation.

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[1] V. I. Lenin. Complete works, vol. 35. p. 287.
[2] Ibid., p. 21.

As long as the people are kept widely informed about these actions and since level of their culture and consciousess is already rather high, they can clearly realize their own interests and determine whether all the higher public power activities in guiding social processes are in line with them.

Owing to the above mentioned reasons it is quite natural that these actions are fully supported by the people. No special study of public opinion is required to see a unanimous approval invariably enjoyed by such major acts as the directives for the five-year plans of the national economy, determining the development of all sides of our social life, and submitted for the general discussion yet as drafts. Even very simple observations let alone the special surveys, bring to light the working people's unanimous approval of the goals and content of the economic reform. Measures taken to implement this reform undoubtedly constitute the most profound inner action of the latest time, which is of the greatest importance for our society. The same is the attitude of the working people to all other actions of our supreme social power, dealing with the major aspects of life of the socialist society and the main directions of its development.

This positive attitude finds a full manifistation in the people's active desire to participate practically in fulfilling functions of social administration. For them it means, first and foremost, to fight for the realization of the goals for the sake of which the society is run at its top level. In the course of the study, carried out in 1967-1969 in Sverdlovsk, it became evident a large part of the working people, and in certain spheres most of them already participate more or less regularly in carrying out the important functions of management. A study of ten enterprises in the Ural has shown that from 46.6 to 64.7% of all interviewed take a hand in fulfilling such functions along different lines of managerial activities. On the whole the results of the various studies done by the Soviet sociologists as well as statistical data make possible to assert that a greater part of members of our society participate in fulfilling various functions of social administrations.

Although this kind of activity is not yet characteristic of a considerable part of the society, even there the prevailing attitude towards the party and government undertakings is at least that of simple approval. Despite all achievements of the Soviet power we cannot yet boast of all members of our society having reached such standards of culture and civil consciousness which would be high enough for a profound understanding of the essence of those undertakings or even for showing some active interest to the latter, it is for this reason that we still observe some part of the people — their number is comparatively small and steadily decreasing, remain indifferent to separate acts of administration. No negative attitude can be practically encountered. A study of the actual tendencies allows one to assert that with the further spiritual development of over growing number of people, manifestations of indifference will gradually disappear to let an ever more active form of general positive attitude to the actions of social powers, in order the basic problems of social life to become firmly established among members of society. This of course will be true on condition that the content of the actions is in correspondence with the general interests of the citizens.

Does it follow from the above said that in conditions of socialism there is no need to study people's attitude to acts of administration? Not at all. While the attitude to the acts of the supreme social power dealing with basic questions of the socialist society's existence and development is rather clearly of practically un-

animous and growing support, things are more complicated and therefore require thorough study when we deal with the popular attitudes towards the second of the previously mentioned groups, namely acts implemented by various administrative bodies and separate officials of the medium and low levels. Elementary observations are required to learn that while some of these acts enjoy approval and support, it happens cases of an opposite attitude disapproval of certain instructions and other acts of similar nature which may result in unwillingness to carry them out, lodging, a complaint, etc. Different attitudes to various manifestations of administrative and managerial activities are also revealed in the course of special concrete and sociological studies.

The results of a selective questioning of the workers of the enterprises in the Urals show a markedly positive attitude to the various sides of administrative and managerial activities of administrative authority by either most of the workers or even by all of them. This becomes still more evident when analysing the worker's attitude to separate acts of administration and actions taken by individual officials. It is obvious that many of the latter receive a major support from all the executives. It is natural, because under socialism this sort of attitude may by regarded as standard in relation to all acts of administration. In actual life this is not always so in relation to the acts which belong to the group under study, this is being explained by causes of local, usually private nature.

It will be sufficient to draw one's attention to the fact that in different enterprises the workers show considerable difference in their attitudes to various lines in the activities of the management and administration, although the basic social nature of those collectives is undoubtedly invariable in our society.

To raise the efficiency of social administration and develop further the socialist democracy our society is concerned with having every unit of the system of social administration carry on in such a way that its every act might be given overall approval. As long as in principle this aim can be achieved under socialism, there is every need for continuous study of the attitudes called forth by various acts of administration to be able to reveal what causes certain difficulties on this way.

Results of the investigations carried out help to reveal some of the causes.

The factors underlying the negative attitude or indifference with which workers treat separate acts of the meduim or lower level may to a certain extent be iniciated by the factors, pertaining to the qualities of the executives since far from all members of our society as was pointed out previously may be described as conscientious citizens with a developed sense of responsibility.

It is natural that people of this type are at times disinclined to carry out instructions by bodies of power, although those instructions are entirely justified and well-grounded from the point of view of the interests of the members of society. Take for example the demand to strictly observe factory regulations or some other duties of citizens. It is clear that the problem arising in such cases is not of how to perfect administration, but how to educate the executives. It should be said here that the overwhelming majority of the working people strongly dissaprove of those who due to lack of discipline refuse to carry out just demands, directives and instructions of authorities; moreover — they make them carry out such instructions resorting to measures of public disapproval. Thus, 89.6% of the workers interviewed by us noted that they were interested in improving labour regulations and

that most of them considered it their duty to bring influence upon those of their comrades who violate the regulations.

Among the causes of indifference and even disapproval shown to separate acts of administration at this level, one finds such which are connected with the shortcomings in the way the managerial activity is organized, with what may be called "drawbacks administration". To evolve measures for their removal is the most important practical task of sociological studies.

Considering these causes it must be said, above all, that some of the drawbacks of administration are explained by the incompetence of some administrative officials at the medium and low levels. This is why the CPSU demands that all our administrators acquired knowledge of administration.

During various interviews there were cases of disapprobation expressed by a significant number of subordinates regarding the ways in which the leaders organise production and working conditions, etc. On the other hand, there are cases of almost unanimous approval of some leaders' methods. Analysing the activities of separate officials one may encounter not only cases of unwise leadership, but also bureaucratism. When decisions and instructions are in conflict with the legal rights and interests of those to whom they are addressed, acts like these will not of course arouse any positive attitude among the people.

Supported by the public, the leading party and state bodies carry on a struggle against similar manifestations of red tape, take various steps to improve the staff of administrators, train and educate them. Much remains to be done yet to have them all duly master the science and art of management and ensure at the same time efficient control over their activities from above and from below, to check even the slightest semblance of bureaucratism, as it was taught by V. I. Lenin and as it is required by the principles of socialism. The Soviet sociologists occupied with these problems see their task in contributing to the practical solution of those problems by producing scientifically grounded recommendations.

To have acts of administration just not infringe upon the legal interests of those whose behaviour they influence is insufficient. A positive attitude is more particularly formed on condition that the above said acts make people be actively interested in having them carried out if man understands that their implementation provides for the satisfaction of some of his private interests. The total support of all actions taken by our supreme social power is explained mainly by the reason that people see in the realization of these actions a way to satisfying their own interests. Sociological analysis has at the same time revealed that the medium and lower level managements acts and lines of activities often fail to arouse any active interest and, consequently, any positive attitude. Thus, the system of planning and material stimulation which was formerly in operation failed to cause interest of industrial workers in making the most of production reserves, in improving technological and economic showings of collective labour. The current economic reform is aimed at changing this system and stimulating each worker to bring his productive efforts into full conformity with the interests of his industrial body and of the whole society in general. Indeed, at those enterprises where the new system of material incentives is applied more skillfully and consistently the workers find their personal interests grow closer to those of the collective (and through it with the interests of the whole society). At the same time the workers are desirous to actively support the administration in its efforts to ensure a stable

rise in a constant improvement of the performance of the enterprise, the quanti-
tative and qualitative showings of operation of the enterprise. Thus 86.2 per cent
of the workers interviewed at the Sverdlovsk turbine and motor manufacturing
plant stated that they became more aware of unity of their personal interests and
those of the plant body; it is not accidental that 73.2 per cent of the workers of the
plant became more aware, as they said, of the need to participate in streamlining
the organization of production, 72.4 per cent — in perfection of labour discipline,
combating thriflessness, etc. The study shows, however, that the economic reform
has not yet brought about such gratifying changes at all enterprises. One of the
basic reasons behind this is that the forms of bonus payment newly introduced
by the management do not always, however, promote connection between personal
interests of each individual worker and general results of collective labour and,
consequently, the individual worker's interest in rendering active support to the
appropriate efforts of the management.

Analysis of concerete acts of administration generally shows that one of the major
problems to be solved for achieving a more perfect system of social administration
is that of providing in every single case certain incentives in carrying out acts of
administration to those whose behaviour these acts are supposed to influence.
Comprehensive and thorough empirical investigations are required to find solu-
tion of this problem.

Finally, there is one more thing preventing a positive attitude to be formed
in relation to certain concrete acts of administration. What we mean here is that
the people whom those acts directly concern (in this case we speak of acts of norm-
ative nature), are often short of information regarding their contents, require-
ments and significance. Thus, even at an advanced enterprise like the Sverdlovsk
turbine and motor manufacturing plant, 15.7 per cent of all interviewed stated
that at times they are completely in the dark about points in the current regul-
ations by which they are paid bonuses; roughly 10 per cent of the workers do not
know whether there exist any regulations about payment of bonuses for fulfilling
their shop targets. At many other enterprises the workers are informed about
appropriate acts even less than that. The Party has taken the number of decisions
demanding improvements to be made in the way the citizens are informed about
all aspect of governing bodies' activities. This is also essential for raising the effi-
ciency of our system of social administration and further developing its democ-
ratic basis.

INDUSTRIAL MANAGEMENT AND THE POLITICAL PROCESS IN THE SOCIALIST SOCIETY

STANISLAW WIDERSZPIL, ALEKSANDER OWIECZKO
POLAND

The problem of industrial management and the participation of the social and political factor in a decision-making process, or to put it more generally, the management and the political process, is one faced by all developed societies. Various types of societies deal with it in a different way; but there are some common features determined by the nature and level of productive forces (technical civilisation) and some specific traits resulting from different political, cultural, and national system of individual countries. These general and specific features should be included in the models of systems of industrial management and decision-making processes.

American and other western theorists often apply two improper methods while analysing the systems of management and industrial decision-making in socialist countries.

First, they accept the administrative model of a "rational and technical" society (according to Barrington Moore's definition)[1] which is in line with American stereotyped images and M. Weber's ideal type of "bureaucracy", and consider it a "regular" and "optimal" organizational structure; then they compare it to the management system in socialist countries and if they find any deviations stemming, let's say, from vertical and horizontal interrelationships between socialist enterprises, from control and integrative actions carried out by social and political organizations inside and outside the enterprises, or from the participation of local party organs in industrial decision-making — they are inclined to look upon them as the symptoms of "chaos" and "irrationality".

Second, in keeping with a priori ideological criteria they classify the management system in socialist countries as "totalitarian" or "autocratic" and the management system prevailing in western countries as "democratic". If more thorough analyses help them find deviations from current definitions of "totalitarianisms" or "autocracy" then they come to conclusion that the socialist management system gradually evolves towards the western "democratic" or "rational and technical" system (according to the convergence theory).

[1] Barrington Moore, Terror and Progress USSR, Cambridge, Mass., 1954, pp. 223-224.

The two very summarily presented methods have been applied separately or simultaneosly although they are basicly contradictory. It is difficult to call Weber's model of bureaucracy "democratic". It treats bureaucracy as institutions which can and should function in relative isolation from each other, regardless of public responsiveness, characterized by strict hierarchical subordination and first of all, by restraints imposed upon the participation of rank-and-file members of organizations and people from the outside in the decision-making process at the top.[2] It is more of a technocratic than a democratic model.

It is worthwhile mentioning that although a model of bureaucracy illuminates the real world in many ways, it does not fully meet the needs of administration in the West or in the East.

It is, indeed, the matter of fact that the system of industrial management in socialist societies undergoes changes but their direction is to improve its technical and economic effectiveness and to broaden the participation of all workers in the managing of an enterprise. The system has its own distinctive development logic.

This is why every attempt of realistic approach by western theoretists to the analysis of the system of management in socialist countries deserves attention and so does every honest assessment of real phenomena which appear in socialist industrial relations. The work of J. F. Hough "The Soviet Prefects: The Local Party Organs in Industrial Decision-making" (Harvard University Press, Cambridge, Mass., 1969) is an example of such an attempt though it is not quite consistent and not quite free of bias and certain preconceptions. The author deals with the role of local party organs in the processes of industrial decision-making and in the coordination of actions being taken in a region. At the same time he underlines the effectiveness of these actions in terms of measurable output growth and proves that political and value criteria should be taken into account while making decisions in every modern society.[3] However, Hough does not see the mechanism of social participation of the factory workers in the managing of socialist enterprises and the double role of all the epmloyees, including workers and administrative staff, who are, indeed, not only members of a given industrial organization but also citizens and as such more or less conscious co-managers of the organization. He follows Barrington Moore in formulating a statement that "the mass of the population does not have a share in decisions determining their fate"[4].

In spite of all this the main J. F. Hough's argument merits attention. It says that one of the most important reasons that public administration in the Soviet Union is well-managed in terms of measurable outputs (it also refers to other East-European countries) is precisely that it does not contain "every ideal element of a classical bureaucracy" and that it does feature what seems to be "rampart particularism and irrationality". According to Hough, the involvement of the local party organs in the managing process prevents a precise definition of the authority of every

[2] Max. Weber. The Theory of Social and Economic Organization, New York, 1947, pp. 333-337.

[3] Jerry F. Hough, The Soviet Prefects: The Local Party Organs in Industrial Decision-making, Harvard University Press, Cambridge, Mass., 1969, p. 288.

[4] Barrington Moore, Terror and Progress USSR, Cambridge, Mass., 1954, pp. 189 and 224, quoted after Jerry F. Hough, op. cit., p. 281.

oficial, and the establishing of clear lines of authority. However, that involvement has been a positive and necessary development rather than a harmful one.[5]

As Hough has put it, deviations from "ideal model" called "monistic model" by Victor Thompson or "rational-technical model" by Barrington Moore, i. e. the overlapping of party and state functions, the participation of local party organs in decision-making, the integrative functions of political and social institutions and the like have a broader significance. Not only do they illustrate the specific features of the Soviet political system but constitute themselves the very problems with the rational-technical model. Similar deviations, which might appear in various forms, are to be observed in every society.[6]

It is the "development administration" model[7] which first of all includes a number of essential deviations from "ideal model" and complies with "non-Weberian phenomena" (such as the assessment of responsible officials based on their ability to fulfil the essential mission of the organisation, the inclusion in the criteria of employment, apart from formal qualifications, political and psychological accomplishments, the use of such incentives which would make the crew interested in the effectiveness of the activity of the organisation, the principle of "double subordination" in organization structure, the coordination of economic activities on regional level etc.).

Hough, taking into account the experience of the functioning of administration in socialist countries, comes to conclusion (worth while considering) that some changes should be introduced to the model which has been almost generally acepted in the administration theory as it does not meet the test of effectiveness and neglects a number of important phenomena in political process: industrial management and decision-making of social significance are in fact a political process.

A number of writers are right in claiming that it is impossible to apply only rational-technical criteria in decision-making processes.[8] Sidney Verba, for instance, maintains that a certain type of combination of "rational" and "irrational" thinking is an essential component of making decisions as a political process.[9] A. Etzioni stated correctly that taking decisions is not only a mental process which balances between means and ends, but also a political process which balances between various political vectors. Each constellation of "means and ends" is of different political significance[10] and is backed up by different social powers.

When we talk about a decision-making process in a political sense we often take into consideration such cases, for example, in which various specialists of a plant (e. g. the chief engineer and the economic manager) or administrators of various rank (e. g. the manager of a plant and the manager of the supervisory cor-

[5] Jerry F. Hough, The Soviet Prefects, op. cit., p. 3.

[6] Ibid., p. 288.

[7] John D. Montgomery and William S. Sifflin, Approaches to Development, New York, 1966, p. 259.

[8] Herbert A. Simon, Models of Man, New York, Willey, 1957, p. 198. Review of Strategy of Decision by Kenneth J. Arrow in : Political Science Quarterly, Vol. 79 (1964), p. 585.
    A. Etzioni, The Active Society, op. cit., pp. 263-266.

[9] Sidney Verba, Comparative Political Culture in : Lucian Pey and S. Verba, eds. Political Culture and Political Development (Princeton, 1965), p. 518.

[10] A. Etzioni, The Active Society, Collier-MacMillan Limited, London, The Free Press, New York, p. 301.

poration) disagree over the plant development trends, introduction of these or other devices etc. while engaging different professional standards as well as different values and interests. Conflicts of that kind can hardly be solved by means of purely rational-technical criteria (in keeping with these criteria everybody can be "right" within his own system, but the answers to a given problem will be different). So there must be a reliable, coordinating body which can represent the common interests of the organization or community and which can mediate in conflict situations among specialists if the problems cannot be solved on the give-and-take basis. In our society the party organization constitues such a body in very many cases. It is also the task of other social organizations as well as workers' self-governments in the plants. These organizations also build social consensus, i. e. the process by which the uniformity of interests, values, and orientation is achieved, because no bargaining can be sucessful and no conflicts can be efficiently met unless "the parties" recognize the common, fundamental values and reach consensus on main goals.

The use of modern scientific and technical achievements, and computers in particular, significantly helps to make rational decisions on many problems. Computers are particularly useful in processing the data and storing of information, however, as A. Etzioni notes, they are less useful in building up of the consensus or in the establishment of normative criteria if such are not available. The progress in science and application of up-to-date technological achievements undoubtedly promote the status of engineers and technical staff as well as other experts. Administrators and politicians relegate some decision-making spheres to such specialists. However, value and power decisions have not been replaced and eliminated — they were either "moved up" or turned over to social organizations. The development of technology does not exclude political and social agents from socially important decision-making processes. Although the role of computers in making decisions in the future is debatable, even the greatest optimists do not consider machines able to meet all the requirements of a rational decision model. This includes thorough information on the course of action and the resulting consequences, calculation of alternative results in terms of their significance for different values, the set of agreed-upon values with which goals are selected and results of alternative courses of action evaluated, as well as a thorough research of all significant alternatives.[11]

"Deviations" from the bureaucratic or technocratic model of management under the prevailing Polish system of national economy management are not only a prerequisite of efficient decisions, but are also aimed at increasing the share of factory personnel, workers, technicians, engineers and economists in planning and management processes. This "deviation" manifests itself in the workers' self-government through councils of workers elected by and accountable to the factory crew. It is also represented by the Conferences of Workers' Self-government which consists of the Works' Committee of the Party, Works' Committee of Trade Unions, the Workers' Council, and representatives of scientific and technical as well as youth organizations. This institution — a kind of a parliament of the plant

[11] A. Etzioni, The Active Society, op. cit., pp. 264-266.

should be a very important element of social activity, or as A. Etzioni puts it, a movement towards "the active society"[12].

If, as Etzioni claims, this process is determined by: 1) building up of an authentic consensus, 2) the reduction of a "prescriptive" state control and an increase in a social control, 3) incorporation of the needs of organization members in the decision-making process — then the workers' self-government of a plant (in corporation with the local party organization) can make a significant contribution to meet these prerequisites. (There are obviously still many difficulties and setbacks hampering the development of a wide, authentic activity of workers' self-government.)

Etzioni's penetrating remarks concerning the spuriousness of workers' participation, the pseudoparticipation of that sort in highly developed countries, and techniques of manipulating human relations[13] apply more to capitalist than socialist societies: in the latter there are no basic divergences of interests and goals between employees and employers because the workers appear in a "double" role, and the principle of workers' participation in the management process is one of the foremost values of the political and ideological system. This principle, moreover, is institutionally enforced despite some resistence and difficulties.

The workers' self-government plays a very important part in the development of social, political and professional activity of workers and in the democratization of social relations. The origin and functions of this type of government as well as the nature of its tasks are closely linked with the process of shaping qualitatively new industrial relations. Socialist transformations of society have, first of all, changed in a radical way the role of immediate producers and created a basis for a successful implementation of their control over the conditions and effects of their work. Under these circumstances the workers' share in making decisions concerning their own plant is both real and necessary. On the basis of social property of means of production the participants of the production process develop common, basic interests which induce real solidarity of workers and help them identify their own goals with those of their working team as well as their plant and society. It is one of the basic factors which make possible the development of workers' democracy and integration of factory personnel.

The idea of workers' self-government currently implemented in Poland is intended both fight syndicalist tendencies (which question the social nature of the state ownership of means of production and undermine the principle of the central planning of socialist economy and its central management, and the ideal of one-man management of enterprises) and bureaucratic and technocratic trends (which assume the limited role of workers in self-government and strip this institution of all possibilities to interfere into production, economic and technical problems of the plant).

Generally speaking, the main goals of a self-government which rationalize its existence in a socialist plant, resolve themselves into providing proper conditions conducive to an increasingly larger participation of workers in making decision concerning the essential production, economic, and social problems of the plants, promotion of an increased rank-and-file workers' share in decision-

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12 A. Etzioni, The Active Society, op. cit., pp. 467, 517, 524.
13 Ibid., p. 643.

making processes on all levels of economy management and in the supervison and control over economic administration activity.

To put these goals into effect requires a manifold activity aimed in the long run at overcoming superfluous centralization, formalism and hierarchism in industrial relations. However, the development of workers' self-government results not in weakening but in strengthening of industrial organization's efficiency. Under socialist ownership of means of production, the workers' democracy is a real boost- er of economic development. Here, first of all, the economic and productive function of self-government manifests itself. The instrumental nature of workers' autonomy in our plants merits a particular emphasis within an intensive economic growth. Looked at in this way, the improvement of the self-government's methods of activity and making its function in the plant more concrete should be consi- dered as an element of a wider process of reforming the system of national econo- my management in Poland and other socialist countries.

The improvement of the planning and management system on all levels, an increased autonomy of plants and plant unions as well as a certain decentraliza- tion of decision-making are a prerequisite of fuller authentic participation.

It would be incorrect, however, to set the central management and centraliza- tion of key decisions against the "demoratic" management model and to equate decentralization of management system with its democratization. Obviously, an ex- cessive centralization of decisions reduces plant autonomy, the initiative of their workers and their participation in making decision. However, within decentral- ization of decisions and increased plant autonomy — other conditions being unsatisfied — decisions can be made without participation of organization members and their representative institutions and without shaping the authentic consensus of the workers.

The idea of workers' self-government tends to overcome such deformities. It is so because within this idea the decentralization trends go hand in hand with democratic management trends. It is assumed that the greater autonomy of the basic production units, the greater the chance to develop the involvement and initiative of the workers, the wider the field for their autonomous activity. So de- centralization can not be equated with democracy, it is an indispensable though insufficient prerequisite if workers' participation in management, and what is more, as experience proves, the relegation of authority process can be fruitful only if it is accompanied by the development of social control over the decision-making process in the plant. This is achieved through party and union organization and workers' self-government.

The workers' self-government should play an important part in the increase of rationality of economic and management decision, because it provides solid ground for the confrontation and discussion of common social interest incorporat- ed in state plans with interests of plants and their workers. As a result, instructions coming from the central office can be based on better recognition of needs and possibilities of the plants. The participation of workers in management within insti- tutional frames of workers' self-government and the dominating position of the state plan helps in an optimal way to match wide initiative and democratic control with central instructions and the requirements of the state plan with needs and interests of the workers. That is why the increase in the range of autonomy of socialist plants aimed at suiting planning and management methods to the current need

of economic growth requires a mandatory improvement of all those tools necessary to bring up and concilliate the rampant and diverse interests in the plant. It also stimulates higher initiative and involvement of individual social and professional groups in the plant and promotes the role of their abundant experience and viewpoints in the decision-making process.

The possibility of wide consultation in the decision-making process concerning essential problems of the plant is also conducive to the integration of factory workers, as well as to providing their uniform action within the authentic acknowledgement of goals carried out by the plant. As a token of all factory workers' participation in the management, the workers' self-government stands up for the interests of all social and professional groups and also for those of the factory and society. To meet both the long-range and the current needs of the factory workers it is intended to thwart any symptoms of particularism and tendencies to play down workers' claims in carrying out the goals of the plant.

At the root of the integrative functions of self-government lies the uniformity of basic interests of economic administration, engineers, technicians and workers of a socialist plant.

The growth of workers' democracy boosts their involvement in the plant management and results in the gradual abolition of social differences between employers and employees, between specialists and ordinary workers. The improvement of socialist plant management is thus inconceivable without the increased involvement of the immediate producers whose initiative and action constitute as important an element of the growth of socialist economy as the technical and organizational factors.

The implementation of the socialist model of industrial relations is not a singular act which begins and ends with the socialization of means of production and the establishment of socialist political authority. It is a prolonged process which develops with the accumulation of necessary material, technical, and social conditions, both objective and those involving problems of conscience, on the national and local scale and often in conflicting situations. Therefore the participation of factory workers in plant management should be looked upon as a process, because the scope, contents, and forms of that participation determine, among other things, the following factors:

— the nature of tasks prevailing at a given stage of socialist development and the concurrent system of national economy management; the degree of management centralization is of primary importance here.

— the level of economic and social development of the country, the state of social tensions and the possibilities of overcoming them.

— the extent of factory workers' disposition to participate actively in social and political life of the plant and the country, the standard of their political background and the level of their professional and civic qualifications.

— legal and institutional guarantees of the real and effective participations of rank-and-file workers in the essential decision-making processes of their plant.

It is worthwhile to emphasize that the problem of real implementation of workers' democracy principles can set up only through empirical research. There are several research suggestions worth putting forth:

— How do the deviations from the Weber's model bureaucracy affect the efficiency of an industrial organization activity and the democratization of management?

— What part does the social and political factor play in decision-making processes (the role of various social organizations and worker groups)?

— How does the workers' participation affect the efficiency of the organization and the integration of workers themselves?

— What factors induce participation and which hamper it?

— What is the degree of authentic participation?

— What is the attitude of administrators and technical personnel towards the institutions of social participation?

— How do the changes in the national planning and management system affect the role of self-government?

Comparative research on an international scale would be particularly instructive. It would have to include various types of society, various levels of technical development, and different political and management systems.

V. COMPARATIVE ANALYSIS OF PLANNING
IN DIFFERENT TYPES OF SOCIETY

V. ANALYSE COMPARATIVE DE LA PLANIFICATION
DANS DIFFERENTS TYPES DE SOCIETES

PLANNING AND SOCIAL PARTICIPATION
IN LATIN AMERICA

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1. Assumptions of Present Planning

When speaking of planning in connection with Latin America, the first obvious thing is that the term must be carefully redefined. The stormy Latin American panorama, where a struggle of worrying authoritarian tensions and convulsive movements of masses on social transition is happening, does not allow to approach the problem any longer as a simple technical system to determine priorities and assign resources in an orderly and "rational" effort to reach material well-being, measured in econometric terms.

The effort of setting order to Latin American energies to achieve economical expansion through patterns of relative comfort found in other cultural regions so-called "developed", has failed. And it has failed simply because planners forgot, in a childish attitude, that, in principle, the determination of goals and social economical procedures is basically *a political problem* and not merely a technological trick.

Because it is not only a question of knowing just what procedures will be applied by an ordering power, independently of where this power stems. On the contrary, it is not possible to conceive any organic process of planning without beginning by the study on how the planning power could exist and how its own structure shall determine not only the procedures but the goals of any "plan".

The believe that it is not necessary to go deep into such questions and that the discussion of the problem should be confined to the general conditions of technical matters which should be accomplished in the design of the "development" plan is a fallacy. We, Latin Americans, know now that all literary previsions and arithmetical games of the technicians, aimed to achieve things such as productivity increase. new distribution of the income or income increase, new sources of employment or social security, increase of the industrialization, etc., have become dusty and useless papers for reasons out of the reach of the categories handled by economic planners and technicians who serve these planners. In other words, by social political reasons.

This refers not only to the obvious problem that all planified effort for development supposes a previous ideological definition of a theoretical nature, but also to the problem. more simple but deeper, that it must be established who

plans at all and every levels and must be known how to build a legitimate consensus (and therefore, efficient) regarding the decisions that conform the plan.

The "modern" planner in Latin America begins and finishes his work assuming that he has by himself the legitimate right to do it and that somebody else will be charged of builaing the concensus or, if this lacks, the coercion needed for the plan to become a reality.

The "planner" pretends that the aseptic and scientific results of his work have not and should not be affected by factors strange to its own internal logic; this is to say, strange to the relations that he establishes among a few variable factors of a quantitative nature, obtained from statistics. He deliberately forgets all those elements for which he cannot obtain figures. Among those, the processes of thought and behavior of those who must endure and execute the actions that he prescribed as automatical redeemers.

It is not surprising that the large and childlike hope towards planning for development", built a few decades ago in all Latin America, has become just inefficient authoritarism, international verbalism, administrative corruption, stressing of the social problems and accelerated growth of misery, anarchy and "dependence.

2. Politics and administration

In general, the technical activity of the planner is originated and encouraged in the government's criterion; according to this judgement, the consensus that legitimates the State and confers authority, is sufficient to give entity and efficiency to the plans suggested or imposed (through different procedures) to the national collectivity, in order to head towards the development goal.

In the same way people obey the order of a policeman or accept to employ the legal currency of a country, all human sectors of every country will be compelled to give their approval (more or less spontaneous) to the strategies and tactics contained in the plans and would necessarily cooperate to achieve this aim.

The design of the plan would be only one of the many (although the most important) duties assigned to the public administration, being almost a service to which the State cannot scape because it is one of its unavoidable duties towards the communuty.

But planning cannot be, except in its last and less important step, a simple administrative decision. In its true and deepest meaning, planning has to be a collective *purpose*, a deliberated construction of the future of the community. And it is not possible to talk about deliberated purposes without being tacitly mentioning the voluntary participation of those who decide them and assume them.

This participation free and voluntary of the community is essential not only to guarantee the practical efficiency of the plan but also, and in a greater measure, to grant the design of the plan according to the problems that really must be solved and not to the problems arbitrarily selected by the technicians as being the only critical and important for the human group that seeks freedom and development. In this last sense, planning reveals suddenly as a matter of political concern even for the effect of its "rationality" and its theoretical coherence.

The importance of this reality to study the meaning of planning in Latin America is even greater than for any other cultural area, taking into account that Latin

American nations have emerged to the autonomous life by a curious process: designing a "legal" nation which should be adapted the "real" nation by the simple mechanism of governmental coercion. Therefore, the degree of political consensus that the government can have for the adoption and execution of the development plans, is less than in other zones where the political life coincides in a greater measure with the formal institutions of the State. In Latin America, the *formal legitimacy* of a governmental action has nothing to do with the national solidarity regarding its purposes.

In other words, when at the base of planning, the direct and active participation of the population lacks, it may be substituted, in a certain measure, by the consensus of the population concerning the norms that regulate the life of the State and make it legitimate. But — and this is the case for Latin America — where the State is an intellectual concept which *preceded* the national solidarity, the legitimacy of laws decrees has no effect on the extent and the force of communitarian purposes.

3. Legal State and Technical State

Neither politically nor economically, the State in Latin America was representative of the population. In the great majority of the cases, the link of loyalty that connected the State with the common people was not enough to form a sufficient grade of national solidarity to maintain the order and the territorial integrity.

This situation, in which a "legal" State tried desperately to frame and to represent a non-integrated and non-participant population, subsisted in essence until the first decades of XXth century and even later. Due to the lack of popular and intense experience of nationality, the spasms of a demagogic nationalism showed up. In one way or another, this nationalism served the old "elites" as a way to retain the legitimacy of the social power in the name of old fashioned slogans that put emphasis in concepts such as "race", "religion", or "family".

At the end of the first middle of the XXth century and as a consequence of world post-war, when the concept of planning for the development appears, in the global panorama, the nature, essentially formal, of the Latin American State had not substantially changed, nor had diminished its divorce with the "real" nation and the "real" population.

The old leading groups, under the disguisement of modern bourgeois or redeemer militaries, suddenly had to face the need to order, to rationalize and to update the economy of each Latin American nation, not only to adjust it to a new world pattern of power, but also to try to prevent and to block deep and sanguinary changes in the structure of the society.

The adopted path, even for those governments that considered themselves inspirated by a sentimental socialism, consistent, almost in every case, in gaining the cooperation of some European or North American technicians in order to build, in econometric terms, new ways to the social productivity in Latin America, trying to reproduce artificially the process and the result of the economic history of the capitalist industrialized nations that showed up as paradigms of "development".

To this end, growing groups of Latin American technicians and professionals, of foreign academic formation, were incorprated, slowly, but surely; they considered themselves as the "vanguard" group in the process of modernization and the

"captains" of the change of archaic structures to achieve the economic and the social progress. The traditional State incorporated them in an essay to hold the leadership of a modernizing evolution without losing in the process anything of its authoritarian power, divorced from the leading social processes. In the same way their ancestors of the XIXth century had allied to the process of the free change keeping the old right of tutorship inherited from the Iberic social forms, the "elites" of the XXth century found in the new "planning science" an element to reinforce and make stable and unmodified their inherited right of keeping old fashioned forms of privilege with the aid of new material and financial techniques of productivity.

In Latin America, these historical factors make catastrophically heavier the universal alliance, more and more important, between the official bureaucracy and the economic technocracy, phenomenon which, on the other side, has become a political threaten recognized by almost every nation of the world, independently of its degree of development. For Latin Americans, this phenomenon, centuplicated by the forces of the social cultural past, leads directly to a double and useless sacrifice: the sacrifice of the political participation and the loss of all hope of economic development.

4. Planning, for when?

Lacking of traditional political participation in the frame and in the process of decisions of the "legal" State, the most indigent classes of the populations have not seen and cannot see in the efforts of planning, which have gained big importance in Latin America since 1950, another thing than oppresive processes, most times incomprehensive, in shock with their immediate needs and with their atavic suspiciousness in regard with the corruption and the disorder of the government.

In the case of the governing "elites", planning — which has seemed useful to elude the social development by the employment of economic modernization — has been considered almost ever as an instrument to make easy the transfer of a leadership eminently agrarian, towards the control of new forms of production and of a new productive organization which allow them to keep and increase the proportion of wealth and of social power, traditionally in their hands. With much more frequency than suspected, the development plans — at a national level, provincial or local — are just class strategies organized in such a way that they add to the ancient dominative methods the advantages of the financial aid or the technique, coming from extra national entities, which contribute to the integration of this discriminative social power to a stratified structure of international power.

For all the above the plans of development in Latin America, for most countries of the area, have had to face two obstacles almost impossible to overcome: the refusal of the greater part of the population to give his approval or cooperation to the methods and even to the goals of the plan, and the permanent political instability which rapidly deposes his governants: the failures (economical crisis, waves of administrative corruption, etc.) having by cause the realization of this type of authoritarian planning, are used demagogically by political leaders as a form of preserving the power and to fulfil their personal ambitions. It is obvious that, to all the above, has to be added the continuous blockage of the Congresses to the

program for development, which is a consequence of the structure of the political processes generally characterized by the "non-participation".

The institutional answers to this kind of obstacles have turned, almost exclusively, around an increasing tendency to confine planning to ambits more or less impenetrable controlled by the Governments, and around the achievement of providing a characteristic of apolitical look to the institutions in charge of executing the most important plans, substracting them from the parliamentarian control and giving them the category of semi-official entities. Institutes and "corporations", apparently autonomous, have proliferated in all Latin America with the appearance of executors of the tactics and the strategy of national planning, reserved to a narrow technocratic minority radically linked to the international institutions of credit and development.

Unfortunately, those manipulations could be successful only in the frame of political reference that would remain stable. But the latter has been affected by the increasing problem of mobilized but non integrated masses; this is to say, affected by the essential problem of lack of political participation. These anomic masses, fighting with the modernizing purposes of the supposedly evolutionist "elites", create a continuous fluctuation of the governmental elements and obstruct the execution of long term plans simply because each new government rejects the adjustment to the political climate which has lead him to the power.

This circumstance makes almost impossible to try to evaluate the results of planning in most Latin American nations, because any long term plan (10 to 20 years) has not been able to remain, not even theoretically, as a national goal, for a lapse of time that would allow to calculate its vitality. Almost every plan has end with the government that projected or proposed it to the country as an objective for the obtention of development; and there all plans remain in the files for the use of researchers of the Latin American utopy of planning and modernization.

5. Planning, for whom?

In its most important objectives, the work of Latin American planners is included in the context covering, at least theoretically, the whole area. This attitude comes not only from the perception of the problems common to all Latin American countries but also from the activities and the outlook of the United Nations Economic Commission for Latin America (ECLA), being the main diffuser of the techniques for planning used today and the training office for the personnel in charge of handling these techniques.

Regarding the economical theory, the technical work of ECLA complements the streams of thought that proclaim, with more and more emphasis the need for solidarity and for integration in Latin America. Planners are trying to provide to the governments the concept of regional development, to which the national plans, both provincial and local, must be subordinated.

A declaration of Latin American Presidents, signed in Punta del Este, Uruguay, in 1967, states as formal purposes the following: "The economic integration constitutes a collective instrument to accelerate the Latin American development and must be one of the goals of politics of each of the countries of the region. To achieve this aim, they must make, as the necessary complement of the national plans, the greatest possible effort."

When speaking of development, it must be understood "economical development"; the national plans for Latin America define it as a process to achieve goals such as distribution or redistribution of the income, better health services, more houses, more industrialization, increase of employment, improving of transportation, growth of exports, etc.

These are very indefinite and general goals that should be obtained simultaneously or that can be in conflict when attained at the same time. In fact, a development plan has no sense or signification if priorities have not been established and when the most important objectives are decided as well as those opposing their accomplishment refused. The national Latin American plans do not establish, for most cases, this priority system, arguing that it does not correspond to a "technical level" and leaving to the governments the task of taking these strategic decisions. But governments, for the execution of these projects, depend almost exclusively on foreign financial aid. And the final result is that the Latin American States leave to foreign agencies the effective determination of priorities.

These decisions are based on the development models considered as more appropriated and conclusive by credit and development entities of other countries. They exclude all considerations of social historical type. Through successive decisions, international agencies are limited to export to Latin America a "modernization" consisting in the adoption of patterns, norms of action and conducts received from the social past of the exporters of techniques and of goals.

From all this, it happens that neither the "national technicians", nor the Latin American governments and the Latin American population, have an important decisory power in the adoption of the criterion on how to achieve the development or to define autonomously and deliberately this "development".

Although the system of imposing ways and procedures to the social effort could give correct answers (and it does not give them because of the facts expressed above) it is obvious that the affected communities feel no engagement — except the "legal" engagement — with the purposes and with the methods of the development plan at all level.

Let us remind here the distinction (made by Veblen and remembered by Aldous Huxley) between the different pragmatic and scientific outlooks, to conclude that common men and women know very well what is better for them and do not necessarily depend on the applied science to make this discovery. It is obvious that, when they have not participated in the decisions they must follow, they are not interested in adopting a strong will to accept the collective plan which will bring them "hapiness".

What has been said with regard to planning in the frame of Latin American integration and in connection with the national plans, is also applied, in small scale, to all the processes for the design of plans at the level of the country and small towns regarding specific sectors of the activity: commerce, health, transportation, housing, industrialization, to give few examples.

It seems to have been forgotten that Latin America is not only a legal group of legal governments at all its levels, but a wide range of people whose process and real social background cannot be brutally ignored but that should be used as essential data from which valid planning of life in community should be built.

C. A. O. Van Niewenhuize has written: "People at large clearly do play a role in development; and this role is no less important because it is so terribly

difficult to define. After all, if the term development is to make sense at all, it should first of all refer to a kind of process through which a given human collectivity happens to be going." And this takes us to the third and decisive question.

6. Planning, for what?

The general topic chosen for discussion in this Seventh International Congress of Sociology (Contemporary and Future Societies — Prediction and Social Planning) takes us to the heart of the problem we are dealing with.

Planning, by its own nature, implicates desire to transform and to modify to some extent and for *the future*, economic and social structures and to find a situation, which will presumably be fairer and in accordance to the needs and human rights.

The above, as simple as it appears to be, implicates the non-expressed concept that people has the right and capacity to evaluate their own problems and to find the adequate formula for future societies to be able to eliminate present errors and for the nations to be able to autonomously find their own ways of evolution towards progress and their own methods to achieve this objectives.

Planning, the way it is being carried out in Latin America, is, above all, a struggle to build up a future for the "underdeveloped" countries like the present is for other countries which reality has been presented as a paradigm. This would mean to give up a projection towards a rational future, gathering all efforts towards a *past and a present* which is actually judged as unfair and inefficient, both in its internal structure and its international relationship.

Luis A. Costa Pinto, a brilliant Brazilian sociologist, has dedicated most of his recent studies to this problem and to emphasize the fact that the single adoption of rules and values which would allow the Latin American countries to be incorporated to the present structures of the powerful countries, is a deeply regressive attitude, a way of renouncing to the task of building "post modern" societies, to maintain societies in an hypothetical present which every minute is considered more anachronic.

Planning everywhere is the expression and recognition of the social capacity to imagine and adopt alternatives with the purpose of changing the present *handicaps*. All of the contemporary societies have accepted and adopted the idea that this intentional change is possible and necessary in those so called "developed" countries as well as in those considered underdeveloped. In other words, the sole acceptance of planning means also the acceptance of the idea that the present is neither fair nor paradigmatic in any present society. In the light of these elemental considerations most of the effort of planning in Latin America to copy modern patterns from another countries with a different history in order to achieve some development, is not only a childish logical inconsistency but a poor experiment bound to practical failure.

7. Scopes of New Planning

As mentioned when outlining the historical circumstances which served as framework to the origin of the "national" Latin American concept, the mechanisms of political participation foreseen by the constitutions were only mere translations

of the bourgeois systems which for a long period of time have been supported and fed by North American and European traditions. But in practice, such schemes have not and do not offer any sign of responsible positive action wherefrom deliberate and intentional action would be possible for the individuals in search of consensus. What we have now is only a legal authority which has, in the past, been closely associated to the free exchange rules of British liberalism and which, nowadays, has been closely associated to the patterns of an economy directed by concrete plans towards modernization.

Nevertheless, while this political incongruence between the "legal" pattern of the nation and the lack of popular participation in its sources and functioning, the old adscriptive loyalties have disappeared in the process of social transition and people are beginning to consider the Government not like the summit of a chain of archaic patronage but as a source of urgent social needs.

This creates a dramatic situation since while demands from the anomic people for the most basic material needs are considerably increasing, the government is definitely loosing its legitimacy and authority which have only been supported by the archaic system of personal loyalty and has been forced to impose urgent plans on a great majority of people who do not understand and who would not be willing to cooperate in these projects.

Thus, the obvious inefficiency of a nation whose people do not intentionally participate in the scopes or procedures of government plans, goes along with the difficulty to achieve public order once the mechanisms of patronage have been destroyed, hence forcing Latin American governments to authoritarism, supported by material forces or identified with them, in the event that militaries are compelled to take the power. But even when it does not assume the characteristics of a military dictatorship, the authoritarian legal power tries to find in the pure technical solution a way to solve social pressures which demand public welfare and social benefits. The material force and the modernization of techniques are growing closer in their cooperation to the extent that they are gradually coalescing: the technician becomes an inefficient dictator, while the politician (civil or military) will begin to mix his role as a leader with the prospects of modern progress taken from the academic patterns of the technician. In the meantime and in relation with this process, the inefficiency and demands from the non-integrated groups will increase, threatening with the collapse of the entire nation.

But most of all, if popular participation is possible for planning as well as for the performance of plans, the barrier *that separates the economic and political life* in Latin America would be eliminated. This barrier makes the social survival a very difficult problem to solve, unless by means of the poor and unsafe coercion of the armed forces. This is the most important aspect that the social and economic planner should face with courage as the base of the social reconstruction of Latin America.

Besides, participation also means a progressive "prise de conscience" carried out from top to bottom in the structure of a progressively integrated nation. And this "prise de conscience" of the national community (which is completely opposite to the nationalistic demagogy) is also the necessary step in the endeavour to achieve, to some concrete degree, integration in Latin America.

The simpliest notion that only a public legality exists in the relationship of the individual and the government, placing the legitimity of the intermediate associa-

tions in a second term of civil links, produces the hypertrophy of the nationalist myths and allow to cover with the name of patriotism the roughest strategies of class, straighten up deep inside to maintain foreign dependency and to handicap the understanding of the needs for integration to a multi-national level with the cultural area of Latin America.

Social and economic planning in Latin America cannot avoid these political considerations on the excuse that its duty consists in projecting "concrete and practical" things which have only meant up to now a considerable waste of energies and of paper work instead of positive results in the struggle towards development.

Even for the most stubborn economists, the foregoing should be an evidence since in more than one sense participation is the basic ingredient for productivity, whatever the ideologic context in which the problem is analysed.

LA COMMUNAUTÉ TRADITIONNELLE ET LE PROGRÈS
SOCIAL EN AFRIQUE SUBSAHARIENNE

KLAUS ERNST

RDA

Une des tâches fondamentales du développement non capitaliste systématique en Afrique est la transformation de l'agriculture.[1] Dans l'agriculture africaine le problème de la transformation non capitaliste se pose avant tout comme problème d'une transformation de ce qu'on appelle la communauté traditionnelle qui, bien que déjà en décomposition, détermine, ou tout au moins influence fortement, tous les rapports sociaux dans le village — surtout dans les régions éloignées du littoral.[2]

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La communauté du village africain se forma en tant que système de rapports sociaux, sur la base d'un niveau des forces productives qui exige, par principe, une assurance collective de la subsistance, garantie par une collectivité. A cette nécessité correspondaient ses rapports de système économiques et socio-économiques essentiels. La plus importante condition de réalisation du travail de l'individu naturellement présumée — la terre — était propriété de la collectivité villageoise. L'individu ne pouvait profiter du sol qu'à condition qu'il fût membre de la collectivit, vu que l'exploitation du sol dans le but de produire les moyens de subsistance, à l'état donné des forces productives, rendait absolument nécessaire l'existence d'une collectivité.[3]

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[1] Pour la notion de la voie de développement non capitaliste voir notamment les documents des Conférences Internationales des Partis Comministes et Ouvriers à Moscou 1957, 1960 et 1969 ainsi que le vaste exposé soviétique : La voie de développement non capitaliste des pays d'Afrique. Moscou, 1967 (langue russe).

[2] Voir entre autres : Klassen und Klassenkampf in den Entwicklungsländern, Bd. 1 Die Klassenstruktur, Berlin 1969, pp. 279—316 (langue allemande); Question agraire et paysannerie en Afrique tropicale, Moscou, 1964 (langue russe); M. Petit-Pont, Structures traditionnelles et développement, Paris, 1968.

[3] Ce que Marx disait sur la propiété dans les collectivités asiatiques, concorde en principe avec ces rapports fondamentaux socio-économiques. Voir K. Marx, Grundrisse der Kritik der politischen Ökonomie, Berlin, 1953, p. 391 (langue allemande).

Ce système est très distinct dans la grande famille qui était la cellule fondamentale économique et sociale de la communauté villageoise et dans le cadre de laquelle s'effectuait pour l'essentiel l'exploitation effective du sol.[4]

De même genre étaient les rapports essentiels entre les grandes familles, rapports de l'assurance collective de la subsistance à l'échelle du village.[5] A la nécessité de l'assurance collective de la subsistance correspondait aussi la stricte répartition du travail, en partie sous forme de castes, et la combinaison immédiate de l'agriculture et de l'artisanat à l'intérieur de la collectivité.[6]

Dans la même mesure que ce système et son comportement social caractéristique du producteur correspondaient au bas niveau des forces productives, elles sont aujourd'hui, en vue de la nécessité, du développement rapide des forces productives, de l'élargissement de la production, tout particulièrement de la production commerciale, une entrave au progrès économique et, de ce fait, une entrave au progrès social, en général. Pour le paysan qui se comporte conformément au système traditionnel, tout élargissement de la production est sans signification ; il lui manque des forces motrices internes sérieuses, pour le développement des forces productives, car le système social dans lequel il vit, qui assure sa survie, fonde son fonctionnement sur le manque d'ambition, sur une reproduction inchangée, etc... C'est sur cela que sont réglés sa conscience et son comportement. Un changement de la production, comme du mode de vie, lui semble pour ces raisons, nécessairement absurde, étranger au système et le perturbe. Ce système ne lui offre, ni une nécessité, ni un encouragement économique pour l'inciter à produire davantage et à développer les forces productives. Lorsqu'il a apporté sa contribution nettement déterminée pour le fonctionnement du système de l'assurance collective de la subsistance, il est alors sûr d'avoir ses moyens de subsistance. Avoir davantage est non seulement pas nécessaire, mais est au fond aussi économiquement insensé pour lui, comme pour toute la collectivité. Car tout excédent de production revient automatiquement à la collectivité qui, cependant — tant que son organisme économique de subsistance fonctionne — n'a pour la partie de la production qui dépasse les moyens de subsistance immédiats, la mise en réserve, le cas échéant les charges sociales, impôts etc. . ., qu'une utilisation, à savoir, la thésaurisation improductive, vu le manque de relations d'échange, le besoin interne de produire des marchandises lui manque. C'est ainsi que le système économique et social de la communauté traditionnelle provoque un comportement social qui représente une entrave au progrès économique. Néanmoins, les rapports de la communauté matériels et immatériels, ne provoquent pas seulement ce comportement entravant le développement, mais ils freinent aussi le dé-

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[4] Pour plus de détails sur la structure intérieure de la grande famille, ainsi que sa position dans le système de la communauté dans les groupes mandingues, voir tout particulièrement E. Leynaud, Les cadres sociaux de la vie rurale dans la Haute-Vallée du Niger, Paris, 1954, pp. 50—53, ainsi que H. Labouret, endroit mentionné, pp. 138—154, et les Manding et leur langue. Paris, 1934, pp. 53—62.

[5] Pour plus de détails en ce qui concerne les groupes ethniques des Bambaras, Malinkés et Minyankas, voir tout particulièrement J. Gallais, La signification du village en Afrique de l'Ouest «Cahiers de Sociologie économique», ainsi que E. Leynaud, Fraternités d'âge et sociétés de culture dans la Haute-Vallée du Niger, «Cahiers d'Études Africaines», No 21/1966, pp. 41—68.

[6] Voir notamment : B. N-Diayé, Les castes au Mali. Bamako, 1970.

ploiement de nouveaux comportements initiés par des facteurs extérieurs[7] orientés sur le progrès économique. Intégré ou réintégré dans les rapports traditionnels, le jeune producteur dynamique qui, à la suite de telles influences extérieures, est intéressé à une augmentation de la production par un changement de la méthode ou de la technique de production, se voit en face de la résistance consciente des représentants du système traditionnel ou son „zèle étrange" se ralentit de lui-même par l'effet objectif des lois du système, mais est certainement freiné et finalement étouffé.

Cela montre qu'une „révolution psychologique"[8], qui vise à éduquer les paysans à une autre attitude au travail, à un changement des méthodes et moyens de production, doit échouer par principe — à la persistance des structures traditionnelles — tant qu'elle sera conçue dans le cadre des rapports traditionnels.

En principe, la conception de la fondation de coopératives sur la base de la communauté traditionnelle doit aussi échouer à la persistance des rapports communautaires traditionnels, car entre ces deux formes de production collective et de répartition, il existe une différence historique-qualitative fondamentale, sur le caractère de laquelle Marx porta très distinctement l'attention lorsqu'il écrivit: „Ce type primitif de la production coopérative ou collective était, considérons le bien, le résultat de la faiblesse de chaque individu isolé et non la socialisation des moyens de production."[9] Ces deux formes extérieurement analogues des rapports sociaux se fondent sur un niveau de développement des forces productives complètement différent au point de vue historique, elles fonctionnent sur la base de toutes autres lois économiques et sociales et renferment par conséquent des comportements sociaux, différant les uns des autres.

La fondation de coopératives modernes sur la base du système du rapport social traditionnel, doit donc nécessairement échouer tant que celui-ci reste en fonctionnement. Outre cela, elle contribue objectivement à la stabilisation passagère de ce système et, de ce fait, à celle des facteurs qui lui sont immanents, les facteurs qui inhibent le progrès social.

Le système des rapports traditionnels se démontra toutefois non seulement comme une entrave au progrès économique, au développement des forces productives, mais, en même mesure, comme un obstacle décisif à la consolidation de l'alliance des forces dirigeantes démocratiques révolutionnaires avec les producteurs paysans, c'est-à-dire à la stabilisation des bases politiques et sociales du pouvoir d'État national-démocratique. Intégré dans l'étroit système économique et politique de la communauté, dans lequel il a à remplir des tâches tout à fait concrètes, nettement définies; dans lequel il est soumis à des règles et des lois fixes qui s'épuisent dans l'assurance de la subsistance, le producteur paysan est limité et isolé dans son horizon politique et idéologique, de telle sorte que son intégration dans une organisation politique nationale moderne telle qu'un parti de masse na-

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[7] On entend actuellement par là, avant tout des mesures conscientes de développement qui ont pour objectif d'éveiller l'intérêt des paysans pour le développement de l'économie et de les qualifier en ce but.

[8] S. B. Kouyaté exigea au Colloque du Socialisme, à Dakar, une telle «révolution psychologique». Colloque sur les politiques du développement et les diverses voies africaines vers le socialisme, Dakar, 3—8 décembre 1962, Paris, 1963, p. 172.

[9] Marx/Engels, Werke, Bd. 19, Berlin, 1962, p. 388 (langue allemande).

tional démocratique, doit être nécessairement, largement formelle et superficielle. Tant que le système traditionnel existe et fonctionne — il n'entra jamais directement, mais toujours par l'intermédiaire des représentants de la collectivité, en rapport avec une organisation politique moderne.

Toute tentative de mobilisation des masses devient ainsi impossible car ces représentants de la collectivité traditionnelle sont objectivement et subjectivement les forces les plus conservatrices, hostiles — nécessairement à tout changement. Cette situation ne peut pas être changée par des transformations politiques seules, car chaque démocratisation de la vie politique au village reste irréalisée tant que sont conservées les bases sociales et économiques de la communauté traditionnelle.

Ainsi, la communauté traditionnelle, en tant que système social, est, dans ses aspects essentiels, un obstacle sérieux au progrès social dans le sens d'un développement non capitaliste.[10]

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Le processus social objectif montre, outre cela, que la conservation factice des rapports sociaux traditionnels n'est non seulement une faute stratégique décisive et qu'elle entrave la transformation non capitaliste, mais qu'elle est, à longue vue, objectivement impossible, sa dissolution étant même un progrès historique, car — comme Marx le remarqua — elles correspondent „au développement des forces productives nécessairement limitées — et limitées par principe. Le développement des forces productives les dissout et leur dissolution, par elle-même, est un développement des forces productives humaines."[11] Les rapports sociaux traditionnels se dissolvent nécessairement dans la mesure à laquelle se développent la production commerciale et les rapports d'échange.[12]

Une forme essentielle sous laquelle ce processus se manifeste en Afrique moderne, est le relâchement progressif et finalement la dissolution des rapports socio-économiques traditionnels.

Avec la désintégration du système traditionnel des rapports sociaux sont surmontés, pas à pas et spontanément, les facteurs sociaux qui entravent le progrès social. Il s'engendre des conditions sociales objectivement plus favorables pour le développement économique et la consolidation de l'alliance des forces dirigeantes démocratiques révolutionnaires (dans la perspective prolétarienne) avec la paysannerie, vu qu'il se cristallise un type de producteurs qui, par principe, a un intérêt objectif au progrès économique et qui n'est plus empêché dans son activité par un lien familial économique ou autre lien traditionnel.

Ceci ne signifie toutefois pas automatiquement une consolidation du développement non capitaliste dans le village. Les producteurs qui se détachent du système économique de la grande famille, sont généralement de petits producteurs pauv-

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[10] Pour cette raison, il nous faut approuver entièrement Alexandre Sobolev, lorsqu'il écrit: «La communauté ne peut, sous la forme dans laquelle elle existe, être la source du socialisme. A la rigueur, elle ne facilite pas la marche en avant vers le socialisme, comme beaucoup le croient, mais elle la freine plutôt.» A. S o b o l e v, Quelques problèmes du progrès social en Afrique, dans : Gerhard Liebig: Nationale und soziale Revolution in Afrika. Berlin 1967, S. 90.

[11] K. Marx, Grundrisse . . ., p. 396 (langue allemande).

[12] Voir Marx/Engels, Werke, Bd. 25, Berlin, 1964, p. 444 (langue allemande).

res qui, avec des moyens de production archaïques et une productivité minime, cultivent de petites surfaces et ne sont économiquement pas à même de moderniser et d'élargir leur production.

La puissance politique des nouvelles forces du village ne se réalise pas non plus spontanément et est limitée par sa faiblesse économique. Outre cela — toujours soumise à la spontanéité du processus — la tendance du passage du producteur traditionnel au petit producteur de marchandises (y compris la cristallisation tendancielle de la propriété privée de la terre) augmente avec la proportion croissante de la production commerciale et du développement des rapports monétaires. Cela forme la basse objective pour la pénétration augmentée d'un comportement social petit bourgeois dans le village.

La cristallisation de petits producteurs de marchandises sur la base de la désintégration de l'économie de la grande famille a finalement une importance socio-économique fondamentale pour la transformation non capitaliste de l'agriculture, car „. . . la petite production . . . produit sans arrêt, tous les jours, toutes les heures, élémentairement et en masses, capitalisme et bourgeoisie"[13], c'est-à-dire que, dans sa tendance fondamentale socio-économique elle est opposée au développement non capitaliste.

Dans les régions ayant des structures traditionnelles très stables et résistantes, la désintégration apparaît généralement sous d'autres formes lors de la pénétration des rapports denrée argent, sans qu'ici ou là, l'une ou l'autre tendance se manifeste en une forme pure. Dans les conditions de l'existence de fortes structures traditionnelles, les rapports sont généralement conservés dans leur forme mais ils se modifient dans leur contenu social; d'instruments de l'assurance collective de la subsistance, ils diviennent peu à peu instrument de l'exploitation des membres de la collectivité par les anciens représentants ou autres membres de la collectivité. De cette façon, il se cristallise dans le processus de la désintégration spontanée des structures communautaires traditionnelles, une couche de gros paysans qui se dresse en face de la masse des petits producteurs pauvres. En raison de leur supériorité économique et en utilisant les rapports traditionnels,[14] elle range sous sa puissance les petits producteurs, les exploits[15] et domine amplement les institutions politiques locales. Elle devient, par cela, une entrave de premier ordre à la transformation de l'agriculture et à la consolidation de la base des forces démocratiques révolutionnaires dans le village.

Cette analyse concise montre qu'au cours du processus social objectif, il se produit nécessairement dans l'agriculture africaine une désintégration des rapports sociaux traditionnels qui inclut, petit à petit, la disparition des facteurs traditionnels qui entravent le développement des forces productives. Elle montre aussi simultanément qui le processus de désintégration spontané ne répond pas aux besoins des nécessités historiques objectives:

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[13] W. I. Lenin, Werke, Bd. 31, Berlin, 1966, p. 8 (langue allemande).
[14] Voir R. Dumont, Afrique Noire. Développement Agricole. Réconversation de l'économie agricole: Guinée, Côte d'Ivoire, Mali, Paris, 1962, p. 166; et R. Cailol, Enquête agricole dans le Delta Central Nigérien, Paris s. d., ronéoté pp. 18—19.
[15] Ces formes de l'exploitation sont variées, généralement voilées et ne prennent que très rarement la forme d'un véritable travail salarié. Cela correspond aux conditions du développement économique prématuré.

1° ce processus s'accomplit historiquement trop lentement et péniblement et ne répond tout particulièrement pas à la nécessité d'une croissance économique rapide.

2° il pousse spontanément dans une tendance socio-économique qui est contraire aux intérêts sociaux des masses laborieuses du village et, dans un sens plus étendu, contraire au contenu du mouvement de libération national.

3° Il ne sert pas à la consolidation de la puissance des forces démocratiques révolutionnaires à l'échelle nationale, à la condition politique principale pour une transformation systématique des rapports sociaux dans le sens du progrès économique et social.

3

De l'étude du caractère historique de la communauté traditionnelle et des lois et formes du phénomène de leur désintégration, il résulte quelques aspects fondamentaux pour la planification de la transformation non capitaliste des rapports communautaires dans le cadre d'un processus de développement à l'échelle nationale. Il apparaît avant tout que la voie vers le socialisme, dans le village africain, ne peut passer par la conservation de la communauté traditionnelle, par son „changement de fonction" ou par „son adaptation aux tâches modernes par l'éducation des paysans", mais seulement par sa transformation socio-économique profonde, de sorte que, dans le village, les conditions historiques nécessaires pour l'édification du socialisme soient créées sans que le long chemin pénible du développement capitaliste doive-t-être parcouru.

Une telle transformation socio-économique exige nécessairement la dissolution de la communauté traditionnelle en tant que système économique et rapports sociaux, vu que ce système est historiquement périmé et qu'il est un obstacle objectif au progrès social et économique. La réalisation des tâches essentielles, politiques et économiques, du développement non capitaliste de l'agriculture dépend de la rapidité avec laquelle les rapports sociaux traditionnels sont surmontés.

En cela, la dissolution de la grande famille en tant qu'unité économique, vaincre son système archaïque de production et de répartition qui correspond aux forces productives retardées, me semble avoir une importance essentielle tout particulière. Il importe qu'un producteur se cristallise qui, délivré des chaînes de la structure traditionnelle, a un besoin objectif de l'augmentation de la production, du développement des forces productives. Basées sur ces changements socio-économiques, les mesures prises pour le développement des forces productives matérielles et humaines, deviennent efficaces, ne rencontrent pas une résistance passive comme dans les conditions de la persistance des rapports traditionnels.

En principe, ces changements engendrent aussi de nouvelles conditions pour l'intégration plus effective des paysans dans le mouvement politique, pour une véritable démocratisation à la campagne et pour la marche en avant de l'idéologie révolutionnaire dans le village. Avec la dissolution des rapports économiques traditionnels dans le village il naît aussi des forces sociales qui s'intéressent[15] à

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[16] Etant donné que les petits producteurs, vu leur faible situation économique, ne sont généralement pas à même d'élargir leur production, etc. . ., le développement coopératif devient pour eux d'une importance capitale.

d'autres changements socio-économiques dans le sens de coopératives modernes — c'est-à-dire qu'en brisant les chaînes socio-économiques de la communauté traditionnelle, il est libéré des forces motrices sociales pour le progrès économique et social dans le village.

La dissolution des rapports communautaires traditionnels ne peut être réalisée à l'aide de mesures administratives, mais elle doit être conçue en tant que processus que font avancer de nombreuses mesures qui se stipulent et se complètent. Pour cela, les mesures concrètes sont respectivement déterminées par les conditions concrètes. A mon avis, dans chaque cas, il importe toutefois:

— de développer les rapports monétaires de telle sorte que l'intérêt que porte le producteur de la grande famille à l'échange augmenté (et ainsi à une augmentation de la production commerciale et de la production en général) et son aspiration à l'émancipation socio-économique de la grande famille doit être éveillé et fortifié par de nouveaux besoins matériels,

— d'utiliser des leviers économiques de telle sorte qu'ils encouragent matériellement ce processus,

— d'organiser solidement les forces dynamiques (dans le parti et dans l'organisation de la jeunesse) et de renforcer leur influence dans le système politique du village; de refouler des institutions politiques du village les forces dirigeantes traditionnelles (éventuellement par des mesures administratives),

— d'élever le niveau intellectuel et culturel des forces dynamiques (instruction dans la technique de production, culture générale).

Néanmoins, la dissolution de la structure traditionnelle ne peut être l'objectif définitif et la transformation non capitaliste ne peut aucunement s'épuiser en elle car, d'une part, la cristallisation d'une large couche de pauvres petits et „micro"-producteurs ne signifie aucun profit réel pour le progrès économique et, d'autre part, avec le passage à la production commerciale, il se développe spontanément un système de rapports d'échange qui, dans sa tendance, débouche dans la formation de rapports capitalistes. La dissolution du système traditionnel de la production, de l'échange et de la répartition, ne peut, pour cette raison, être comprise que comme un aspect partiel nécessaire d'un processus global de la transformation non capitaliste. Tout ce processus comprend l'édification graduelle d'un système de rapports sociaux nouveaux, de rapports transitoires, dans lequel doit être intégré graduellement le producteur qui se libère du système traditionnel de production et de répartition. De tels rapports transitoires sont, avant tout, des rapports coopératifs qui, dans leur niveau, doivent être adaptés aux conditions objectives et subjectives de la phase respective du processus. Les rapports coopératifs doivent, de ce fait, être développés d'abord dans le domaine de l'échange (vente de la production commerciale, approvisionnement des producteurs en moyens de production et de subsistance et étendus graduellement à d'autres domaines économiques pour lesquels les besoins et conditions objectifs sont donnés, comme l'accumulation coopérative et l'octroi de crédit ou les simples formes de l'entraide dans la production. La production coopérative ne devrait jouer un rôle que dans une phase très développée, vu qu'elle exige un haut niveau des forces productives et de la conscience.

Dans la création et la stabilisation des rapports coopératifs non capitalistes il importe surtout de:

— créer dans le village, à partir des forces progressistes, un stable noyau politique dirigeant qui domine décisivement les organes politico-administratifs locaux et sur lequel les forces démocratiques révolutionnaires peuvent s'appuyer, d'un côté, lors de la propagation, de la fondation et de la stabilisation de la coopérative et, de l'autre côté, dans la lutte contre les forces capitalistes embryonnaires qui se développent spontanément et contre l'infiltration de l'idéologie petite bourgeoise,

— de gagner pour la fusion coopérative, par un travail politico-idéologique et à l'aide de leviers économiques les producteurs qui se libèrent de la structure traditionnelle,

— d'assurer une bonne gestion de la coopérative (d'abord et sûrement, pour un certain temps, par des fonctionnaires du développement, cadres du parti, fonctionnaires de l'administration, etc ... mais de plus en plus par les paysans progressistes eux-mêmes et en excluant le plus possible les forces dirigeantes traditionnelles),

— de faire avancer à une allure accélérée (avec des moyens économiques, politiques, idéologiques), par le nouveau noyau dirigeant politique, le processus de désintégration de la structure sociale traditionnelle,

— d'élever le niveau d'instruction de la technique de production, de la gestion économique, etc ... et de culture générale des paysans ainsi que d'intensifier l'approvisionnement en moyens de production modernes.

— de rétrécir et de contrôler les possibilités de cristallisation et de développement d'éléments de rapports capitalistes, de telle sorte qu'ils ne puissent plus être un danger pour la transformation coopérative non capitaliste.[17]

Il va de soi que les deux processus nécessaires — la dissolution de la structure traditionnelle et l'intégration des producteurs individuels dans des coopératives — sont intimement imbriqués. Même si, par principe, la réalisation de la première tâche est la condition du succès de la réalisation du second problème — on ne doit pas songer à se borner d'abord uniquement à la dissolution des rapports traditionnels et à ne s'occuper de la création des rapports coopératifs que lorsque les dernières vestiges des rapports traditionnels ont disparu. Une telle politique serait funeste et favoriserait directement la formation spontanée des rapports de production capitalistes, du fait que le processus de désintégration ne s'effectue pas uniformément et qu'il ne peut être arrêté pendant un temps déterminé. On doit considérer le rapport entre ces deux phases plutôt comme un processus continu, de sorte qu'il existe nécessairement, pendant une période prolongée, une superposition multiple et un enchaînement compliqué des rapports économiques et sociaux différents. L'essentiel est que dans ce processus les rapports communautaires villageois traditionnels seront substitués progressivement par les nouveaux rapports de type non capitaliste, national-démocratique.

Pour tout ce processus il est important qu'il ne peut être un processus spontané, mais qu'il doit être commencé et poussé en avant, contrôlé et commandé dans toutes ses phases, par le pouvoir révolutionnaire centrale, car:

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[17] Cela répond absolument au caractère de l'étape de développement non capitaliste en tant qu'une étape de développement transitoire à économie pluraliste, que, pendant un temps prolongé des éléments de rapports de production capitalistes continuent à exister et se recristallisent aussi spontanément.

1⁰ Les collectivités traditionnelles, en tant qu'elles fonctionnent encore, ont, en raison de leurs lois intérieures, la tendance à se reproduire économiquement, socialement, idéologiquement, etc... au même échelon, c'est-à-dire de ne disposer qu'en une mesure extrêmement limitée, de forces motrices internes pour une transformation sociale.

2⁰ A tous les degrés de la transformation non capitaliste — lorsque la communauté est alors entrée dans le processus de la dissolution de ses rapports sociaux essentiels — il existe objectivement le danger de cristallisation de tendances capitalistes dans les rapports sociaux matériels et immatériels, en raison de l'action spontanée des lois économiques de la production commerciale pré-socialiste.

C'est pourquoi le renforcement politique, idéologique et économique continu des forces révolutionnaires à l'échelle nationale est sa condition générale décisive.

La mise en évidence du rôle décisif de l'État lors de la transformation non capitaliste systématique du village, qui résulte des lois de ce processus, ne signifie aucunement une sous-estimation du rôle actif des masses paysannes. Il importe plutôt ici que le processus de transformation soit programmé et canalisé dans son intensité et, avant tout, dans ses étapes qualitatives, qu'il permette la mobilisation croissante et la participation active des masses paysannes, qu'il soit organisé de sorte que — comme Lénine l'accentua déjà en 1923 — les „. . . masses réelles de la population y prennent vraiment part"[18].

Avec la fondation et la stabilisation des coopératives, il se forme, pas à pas, dans le village, un nouveau système de rapports sociaux qui diffère fondamentalement du système communautaire traditionnel et qui, en raison de ses lois économiques et structurelles, renferme des forces motrices importantes pour le progrès économique, pour surmonter le retard économique et créer de nouvelles conditions objectives pour la consolidation de l'alliance des forces dirigeantes révolutionnaires avec la paysannerie.

C'est en tout un système social de caractère transitoire qui, lui-même étant en train de subir une transformation dynamique permet dans le village la création des conditions nécessaires pour une transformation socialiste.

Jusqu'à quel point la transformation coopérative non capitaliste remplit-elle véritablement cette tâche objective et aboutit à une transformation socialiste, cela dépend de la mesure dans laquelle les conditions nécessaires pour le passage au socialisme sont dans le cadre national.

18 W. I. Lenin, Werke, Bd. 33, Berlin, 1966, p. 455.

CHARACTERISTICS TO THE DEFINITION
OF PLANNING IN SOCIALIST ECONOMY

R O M A N   M O L D O V A N
ROUMANIA

1. *Prospective research, objective necessity, with wide application possibilities in contemporary society.* Man's natural, genuine concern to foresee the future, bears more and more the character of objective necessity. This objective character draws, among others, upon the fact that in modern society the various social activities have undergone the uttermost diversity — social division of labour went extremely deep — and two factors: the demographic factor and the scientifical and technical revolution develop according to a dynamics and ampleness, which greatly differ from the past and whose effects entail deep changes within the whole society.

Besides, this necessity is interwoven with and completed by the even better existing material and scientifical conditions; these conditions open wide possibilities in appreciating the future, in knowing and identifying the laws, the tendencies of further development as well as the factors which might influence it. The above mentioned conditions and possibilities may be turned to account, may find their applicability in any form of prospective research, either with the exploring character i. e. investigation of the future, of the probable possible, or those forms where the normative elements prevail. Prospective research is an essential component of scientific knowledge with wide application possibilities in every domain of the reality — nature, society, man.

The widest achievements in the prospective research carried out so far, mostly confirmed by the subsequent development are referring to technics.

In the social domain, alongside the forecast of probable evolution of the material factors, of the conditions of that nature, one should predetermine — in close interdependence — also the prospective evolution of man's needs and wishes related to his health, rest, comfort and implicitly his spiritual requirements. The problem grows more complicated in the social domain since within the period under consideration there occur changes in the social relations, class relations, social groups, the balance in politics etc.

Irrespective of the difficulties and the peculiarities of the prospective research in social sciences, it benefits the technical means of modern science, the latest achievements in the elaboration of dynamic models, modelling and simulation. While the widening of the possibilities of the scientific research has the most important implications when studying nature with a view to a better knowledge, in social

sciences it brings in new elements since it extends also to this domain — under specific, particular circumstances — the usage of experiment by combining modelling with simulation in the conditions of a scientific programming. The covering ability of models with many variants and variables, offered by the computers is actually an essential prere uisite that, once existing, created the possibility to use the new procedures, to elaborate dynamic models representing reality or parts of it. At the same time it became possible the introduction into the model of new variables, which succeed in characterizing — in mathematical formalization — with the uttermost truthfulness the complex reality they are projecting. Thus the linear analyses of the processes and phenomena — which are usually simplifying — are gradually replaced by analyses conceived and founded as systems — cybernetic modellings. In terms of this development the delimitation between the deductive and the inductive method, as well as that between reasoning and experiment does no longer bear the clear-cut, commonly used character which is relatively fading; on the other hand prospective research — as a relatively new realm of research — as they gradually advance as method (modellings as cybernetic, sociometrical systems) succeed in characterizing more actually and amply the development of the probable future. We therefore referred to method but the wide, actual characterization of the future, obviously, implies, in the main, the scientific definition of the goal of this research to which this method is applied. The analysis of the plan as part of the prospective research, where the normative side is greatly prevailing, induce us to state that, in social practice, planning acquires an even greater significance, as a tool within the measures of economic and social policy and an essential aim of the scientific research. Economics enables, for instance, in close connection to the emphasis laid on the concerns regarding political economy, to appreciate the development, by comparing the predominance of these trends in thinking with the even smaller number of the laissez-faire adepts. This is illustrated even by the capitalist countries where the interference of the state economy and society is steadily growing under many forms and by multiple means. Specialized bodies have been made up which carry out prognosis studies or plans, programmes proposals, according to the conditions characteristic for those systems. As well known in this respect France shows the way as creative school in economic thought and in practice. Here the plan is an official tool whose provisions are compulsory for the state sector and fulfil, at the same time, an indicatory function, such as recommendations, for the private economy. It is all the same edifying that even where there are no officially elaborated plans, but numerous calculations, models of growth, prognosis studies, calculations for the various sectors a. s. o. are however carried out.

Planning advances more and more in the foreground, on the one hand as a social-economic forecast method and, on the other hand, as a totality of technical procedures.

2. *Planning as component part and as stage in prospective research: the plan as comprehensive model worked out in social sciences and as a tool in the unitary management of social activities.* A very important moment, a stage within the routine prospective action in socialist countries is the elaboration of state plans for the development of national economics.

In socialist countries within prospective research (the scientific knowledge of the future) the emphasis is laid on the plan, that visualized from this standpoint

is a model elaborated in social sciences covering the economic, technical social development. Unlike the prognosis stage of prospective research, the plan — subsequent stage — stands for a double function, i. e. on the one hand as normative frame of the development and on the other hand an active tool for the economic policy measures. In our socialist society, plan and planning are regarded as stage and as a particular moment of the huge action of prospective research. The plan represents, from this standpoint the completion of the choice, out of a great number of variants — successively studied as possible for the further development — of a normative variant, adopted as corresponding and necessary model for this development. i. e. usually covering 1 year, 5 years or even a longer period of 10, 15 years. As forecasting model, drawing upon the prospective, prognosis studies, the longer is the long-term period, the closer are the prognosis and prospective studies to the plan's forecast, as regards the accuracy and the normative character; on the contrary, as near a future is envisaged by the plan (1-year or 5-year plans) so more pronounced is its character of normative programme. Making use of the notations of French economists we could state that a stepwise passage occurs from directing, indicatory indicators towards compulsory, normative indicators. The plan, and planning management of national economy, is an organic, component part of our socialist system, it belongs to its very nature. Plan is an active tool in the operation mechanism of our society, since the indicator system directs the development of economic and social phenomena and processes as a whole. By its content, the State plan is a frame for the macro-economic evolution, on the one hand, and on the other hand also diversified for the micro-economic one. The plan includes, based on previous prognosis studies, the variant considered as the optimum one. This variant comprises, according to a certain hierarchy, the priorities in national economy; here too, are predetermined the equilibria, the multiple interdependences present among relations in economy and society. The interdependences and equilibria are conceived within the sharpening of the socialist and world international division of labour, of the widening of the economic, scientific, technical and cultural collaboration and cooperation with the socialist countries as well as with the other countries irrespective of their social system. The sovereignity of the socialist State, i. e. one of its basical attributes, is embodied, materialized, reflected during the achievement of such relations, of such multiple forms of international relations, i. e. on the one hand, the planning as a totality of successive decisions and measures and on the other hand, as a plan, respectively framework and instrument of the development. Within the socialist system, the State is the main instrument by which, on the basis of objective laws of social development, the management and organization of economic and social-cultural processes is carried out. To this end a corresponding, adequate State mechanism is organized in time. The achievement of plan indicators, in terms of foreseen balance, ensures the proportional growth since national economy in its development is a balanced system which undergoes steady transformation. Social practice in socialist countries, countries where the system of planned economy is in force, proves that the plan instrument and planning as a method may, with best results, fulfil the function, on the one hand, of directing the development of social processes, and on the other hand of achieving the proposed social-economic objectives, for the respective period. Implicitly with this development, structural changes also occur, together with the improvement of material

conditions necessary for an increased comfort for public health, the satisfying of man's demands for rest and culture.

3. *Important stages in the statement of the plan's content, in ensuring the conditions to its scientifical foundation, deepening of the concern to increase efficiency in economy.* Given the normative function of the plan in our socialist society, special efforts are made to provide it with the most real content. Therefore, an important elaboration stage (besides choice, adoption and embodiment of prognosis research) is the working out of the plan content. This means a new step in the transition from the draft of preliminary plan to the proper plan, to the normative, state-acted plan. This stage mainly refers to the transposition into systems of plan indicators of the PARTY DIRECTIONS for that period, directions which include the basical commitments of the social-economic development in connection with the plan period. In this period of the elaboration of the model, of the plan, there occur, when judging its content, some criteria, some elements which contribute to the delimitation and connection of its provisions to the basical objectives of the social-economic development. According to the same way one may check up the extent to which the interdependences and balances stipulated by the plan ensure the fulfilment of these basical, political, economic, social etc. objectives. The elaboration technique also uses some reasoning (criteria), which, as already stated, help in verifying the content of the transposition into specific indicator systems of the plan. These criteria may also provide elements which cooperate in terms of optimisation of plan variants, as to the way its provisions meet the requirements which society, i. e. the needs of social development causes them to arise, in our socialist system, in front of such a model. A first group of requirements, i. e. criteria, refers to the estimation of the extent to which the successive variants of the plan, i. e. model, ensure a balanced development and at the same time a steady increase in the respective period and also to which extent do structural changes occur; all the above mentioned takes place in terms of an increased efficiency of the activity in the branches of material production as well as of the activities in every realm of social useful work. Another group of criteria deals with the establishment of the extent to which the balanced development of the national economy in its many sectors does on the one hand create the conditions and on the other hand makes necessary a wider participation in the exchange circuit of word's material, scientifical and cultural values; to what extent one uses, in the planned period, to a high level, the compartive advantages tied to the larger participation in the international socialist and world division of labour and whether, for the same period, the premises are laid for increased advantages on the long-term prospective stage. As already shown, for our socialist society planned management is an objective requirement, that has concomitantly created the conditions necessary to its exercising. The plan model previously establishes in a schematical way the frame of the functioning of economy. This frame is not elaborated with a theoretical, abstract character, be it descriptive, explanatory or a mixed form of the two, but as an economic model related to reality since it measures and predetermines, it quantifies the subsequent evolution of prospected phenomena and processes. Paying attention to the recommendations of the organizing team of our working group, I should like to dwell, in the following, upon some technical, empirical aspects, upon some procedures while elaborating the plan, without disregarding, not even for a moment, the fact that the technical methodological procedures are subor-

dinated and should be completed in order to ensure the plan, the function of a development model, of a foreseen frame with a view to the social-economic evolution as well as the function of active instrument for the substantiation of the measures of economic policy. In our socialist economy the plan bears a unitary character including the economic and social activity and the material basis of cultural activities, the achievement of the objectives ensures the fulfilment of a stage in the economic growth, in the development of economy in its many sectors. The plan is worked out for various periods. The current, as well as the long-term planning, do coexist with corresponding interpenetrations. The annual plans materialize and state more precisely the provision of the five-year plans, which in turn are the stages of deepening, specifications and materialization of the provisions in the long-term plans and respectively in the prognosis analyses and studies. While elaborating the drafts and the plans a technique, and methodological procedures took shape, whose validity has been gradually checked and which had more and more improved. Regardless of the fact that the elaboration of the plan is preceded by prognosis studies, the proper operations, on this stage of prospective research, begin by a previous documentation, where the rhythms and proportions of the economic development from the period prior to the next plan are identified. Since the plan operations aim at knowing these rhythms and proportions, they may well substantiate by extrapolation a first approximation of the future. The previous documentation also includes the elaboration of some prospecting studies of natural resources, of discovering new resources for the economy and turning them to account, analyses according to branches and the totality of the national economy, the calculus of the efficiency of investments, studies on the evolution of the income of the population, studies on the deepening of external economic relations, scientific research a. s. o.

A very important part is granted to studies on a better utilization of production capacities, the possibilities to apply the results of scientific research in general and of the new technological procedure in particular, the assimilation of new machines and equipment a. s. o. Every previous study and documentation, correlated to the provisions of the DIRECTIVES, which establish the extent and dynamics of the development of production forces, the distribution of the national income and the increase in the standard of living as fundamental parameters, aim at defining the indicator system of the objectives, as well as of the means necessary to carry out, according to the plan, the socialist reproduction on an enlarged scale. This actually implies anticipations regarding the essential chapters of the plan: investments, developments of scientific research and the applications of technics, training of personnel, social and economic development of the regions and localities, international collaboration, income policy resp. prices and salaries policy a. s. o. The attention of all those participating in the elaboration of the plan model is focussed on these problems in order to establish a first frame for the further development, where the decisive part is played by the basic provisions concerning the production and distribution of the national income, the proportions which characterize systematically the development of national economy. This frame is optimized by successive variants, when the increase is analysed in the social product, in the totality of the national economy as well as in various branches of the material production, and the increase in the national income and its distribution between the two funds: the accumulation fund and the consump-

tion fund so that a steady production growth should be ensured, in terms of an increasing living standard. Along all these stages the problem of the equilibrium, checked up by balance calculations is present, too, and it provides the first content elements nesessary to the proper working out of the future plan. Important steps are also being taken by the combining and at the same time by the gradual passage from analyses and studies based on elements with prevailing macro-economic aggregates, to sector analyses according to the branch profile. A particularly important stage and a qualitative one, that completes, controls and at the same time estimates the content of quantitative operations — already mentioned — refers to the analysis of the efficiency, to the organization of the appraisal of the maximum optimization — under the given conditions and possibilities — of the whole development. This is reflected in the rhythm of the increase of the productivity of social labour, in the conditions of an increase, in a steady, inceasing rhythm of the material production and of the social product, concomitantly with the reduction of the expenditure of social labour expressed in products. The analyses defining the content of these aspects are substantiated by the theoretical statement of concepts, of the efficiency both at micro-economic level, as profitableness and at macro-economic level as social efficiency. They also use a system of calculus normatives, scientifically estabished on the basis of existing realities and those to come, which may be applied in the every-day practics of economic units. These normatives, appraisal criteria of the material, financial and labour efficiency, ensure also the interdependence relations with the macro-model of the development.

4. *Institutions and organizations which ensure the functioning and stimulate the deepening of the socialist democracy in planning: improvements in organization and in the management of economy: promotion of collective work and collective management.* Due to the content and the part played by the plan in socialist economy an institutional frame is organized and functions for its elaboration, that starts with preparatory stages, prior to operations, goes on with the proper drawing — up as variants of plan proposals subject to the debates and approval of the State decision bodies — government and Great National Assembly — and ends with the fulfilment of its provisions and, if need be, with its partial adjustment while developing. The normative character of the plan and hence the importance of its central aspect do not rule out adjustments and changes so much more numerous as the plan covers a longer period. The elements generating such changes are mainly related to the changes in science and technics, to the identification of new conditions and natural possibilities, to the agriculture, to changes in the consumers' demands, modifications on foreign markets a. s. o.

An essential characteristic, leading like a red thread through all institutions and organizations related to the elaboration and following up of the fulfilment of the plan, refers to the largest participation, on all stages, of the working men from production, scientific and technical research, teaching system a. s. o. Forms and methods have been implanted, practiced and improved, which ensure a many-sided dialogue according to the hierarchy of decisions (for the division of social labour, of the specialization and according to territorial profile). The fact that the plan is worked out in accordance with a threefold profile: branch, department, and territory and that the participants in the production process and the various organs of State power should contribute with studies, analyses, proposals of solutions, objectives a. s. o. to be achieved in the period the plan refers to, make the plan

to become a conscious action. This characteristics stems in, and is substantiated by the fact that its provisions are based on the proposals of the working people, i. e. those who, the plan once approved, have to implement its objectives. The whole mechanism of economic activity is directed according to plan indicators, using to this end economic key factors, by means of which both the units in economy and the individuals are going to have a joint interest in the fulfilment of these indicators. Thus, alongside with the carrying out the quantitative and qualitative objectives, the needs are met and the individual aspirations of all the members of the socialist community are satisfied. It is thus clear and conclusive how deeply anchored in reality are the plan provisions of the plan and to what extent the plan, in our system, as a part, as a stage, in its conception and prospective research, its anticipations, provisions, starts from the possibilities appraised as workable, it identifies the resources, means and ways and is made up and promoted by active social forces. Consequently, the plan is not the image of the future made up as a function of some desiderata, it has nothing in common with models constructed without such substantiations, models which more or less bear an utopian character. A most particularly — determined — role within the construction of the model of the socialist plan, reverts to the social progressive forces and respectively to the Party of the working class as leading force in society in alliance with the peasantry and intelligentsia. The realistic and scientific character of the plan model elaborated in our socialist economy lies in the practising, promotion and deepening of the socialist democracy, in the listing of objectively substantiated anticipations, in the activity carried out under the impetus of communist ideology a. s. o. As well known marxism-leninism perceives reality and therefore its anticipation, dialectically; hence prospective research is viewed as including several probable possibilities, out of which for the period the plan refers to — one chooses the variant that, according to multiple considerations, appears as the most opportune, necessary and optimum. A very important step in improving the management mechanism and the organization forms was — in Roumania — the creation of industrial centrals, made up by grouping several enterprises. Thus the competence field of the own economic administration has been extended to the national economy. By promoting the own economic administration at the level of centrals, groups of enterprises, the domain of the self initiative of the enterprises, that of the direct relations based on agreements is widened and, at the same time, closely depending upon their results, the material joint interest of enterprises and employers in the affairs increases. Thus the centralizing aspect of management is balanced and harmonizes with the initiative and the rights of entreprises implied by the own economic administration. Centralized planning in socialist countries, the unique state plan, ensures the establishment of essential objectives in the development of national economy, its rhythm and proportions, of the content of various plan sections as domains of the reality and as expression of some processes and phenomena, as well as the establishment of means meant to ensure the fulfilment of every objective. The way the centralism and the relations between centralization and dscentralization are viewed, is clearly stated in the recent exposition of comrade Nicolae Ceaușescu, Secretary General of the Roumanian Communist Party. He points out the fact that the appreciation of the role of the state in society should be made in connection with the necessity of a unitary leadership of the social activity inclusively of the centralized management and planning of the

economy. At the same time, owing to the complexity of socialist construction, the rights and autonomy of local organs, enterprises and other institutions should be necessarily extended; thus central management and planning will harmoniously combine with the autonomy and the initiative of lower-grade organs and units. That is why it corresponds to the double content of democratic centralism. The same exposition states that "our Party pays a particular attention to the application of objective economic laws, to the use of economic levers in order to increase the efficiency in the production of material goods". It further states that: "We consider as wrong both the conceptions promoting an uttermost centralism that strangless the initiative and responsibility of economic units and ignores the objective economic laws, and the conceptions according to which material production should regulate spontaneously, based on market impulses and ignoring the conscious factor in leading the economic and social activity" (N. Ceaușescu — Speech held at the Fectiva Meeting dedicated to the centenary of V. I. Lenin's birthday, Scinteia, No. 8,400, April 18, 1970). The development of the activity of enterprises in these conditons ensures the final fulfilment of the macro-economic frame created by the state plan. The conclusive essential decisions of economic policy are taken by the supreme Party and State bodies; however, at the same time the economic units enjoy the widest attributions in carrying out their tasks as component parts whose activity concurs to the achievement of the State plan. A peculiarity of our economic mechanism and of its improvement lies in the as close as possible approaching of the management to the production processes, this leading to highly qualitative decisions. As many as possible operating functions are transferred and will belong to the production units, while the conception and coordination functions, according to a corresponding hierarchy, will revert to the higher bodies. Another characteristics of the mechanisms of our economy is the corresponding application on its various stages of the principle of collective work and collective management as a form synthetizing the most varied opinions when decisions are grounded. To this purpose organization forms have been created, necessary to the consistent and systematic application of the principle of collective work (committees in departments, managerial committees in the centrals and the enterprises) as well as forms for debates and analyses comprising as great as possible a number of employees (general meetings of the employees).

RATIONAL AND NON-RATIONAL ELEMENTS IN PLANNING[1]

HELEN CONSTAS

CANADA

Almost all national states these days, whether they designate themselves as socialist or capitalist, engage in some amount of planning, with varying results. However, when we try to analyze these results to see what might be the interrelation between planning and its consequences, as well as what might be the results of planning in different types of societies, we run into a host of problems. For our purposes here, these problems may be divided into those of planning at the empirical level and the problems which arise from planning as an ideology. This paper wishes to draw attention to some of the complex elements, then, in planning in different types of societies.

I.

If we turn, first of all, to the empirical evidence about planning in different types of societies, the results are curious and instructive. According to the best judgements of economists, although, of course, I am aware that there is considerable debate about this, there is no clear evidence that planned societies are in any way superior to non-planned or market societies as far as generating more rapid economic growth or social change, not to mention general social welfare, rising standards of living, etc. If one considers the economic performance of the two largest socialist powers, Soviet Russia and Communist China, the leading advocates of a planned economy in particular and planned social life in general, one notes a very uneven picture. In some periods, production has expanded rapidly, but not necessarily more rapidly than in capitalist societies, such as Japan or the United States. But in other periods, production has stagnated or even declined, although again not necessarily more than in some European or Latin American countries!

In short, there is no single pattern of results to be expected from societies where planning is advocated and where, to that end, state property predominates over private property forms and where centralized decision-making over all aspects of social life is the usual practice. Certainly, there is no simple, constant upward trend that is visible in planned societies, no more than there is in non-planned

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[1] A revised version of a paper of the same title delivered at the International Sociological Association's 7th World Congress of Sociology, meeting at Varna, Bulgaria, September 1970.

societies where private property forms tend to predominate and decision-making is distributed over a wider network of persons in a multi-power centered society operating through market mechanisms.

What can be concluded at the empirical level from this fragmentary and uneven evidence? Simply, I think, that planning is *only one* factor in shaping social life. Other elements, sometimes quite unplanned and unexpected, are also at work. This is inevitable and reveals some of the limits of the assumption of social rationality that advocates of planning seem to operate with. For example, at the simplest and least interesting level, there are still the intrusions of nature: floods in Roumania, earthquakes in Peru, etc. Secondly, and more importantly, there are all those forces stemming from man himself. Thus, the cult of personality, war, the ambitions of new social groups, the emergence of new creative ideas, accidents, new values, technical innovation, etc., etc. — all sorts of elements can be referred to here that modify plans, require new plans, interfere with plans, etc. Graphs of production may plunge downward due to invasion, the resistance of peasants to collectivization, purges of sections of the Party, or of the administrative apparatus, etc. The Great Leap Forward and the impact of the Cultural Revolution from which China is only now emerging may both be cited.

Other elements, unexpected, intractable, irrational and innovative are at work shaping societies. One might put this problem another way by asking, "How much planning is there really in planned societies?" The answer is not an easy one. Planning is often a slogan or, at best, an aim. Much that passes for 'planning' is really wishful thinking, exhortation, 'targets' or hope and dream, or even at times an effort at education, as a consideration, for example, of planning in much of the Middle East will show. Let me, in this connection, add some concrete cases here based on my own experience of living and working in Egypt under Arab Socialism. It is no secret, for example, that the massive effort at population control there has met with only limited success. No amount of planning on Pres. Nasser's part managed to distribute doctors more equitably in the villages compared to their concentration in Cairo. No one has ever figured out the exact content of Arab Socialism, in fact, upon which, presumably, Egyptian planning rests just as there equally is no Marxist theory of planning agreed upon in socialist societies. Finally, some things which one expects to be *spontaneous* and *unplanned*, such as popular demonstrations and the suicide of defeated generals, conversely bear all the marks of state planning. All this underscores that it is difficult sometimes to tell what is and what isn't planned in planned societies.

Paradoxically, there is not necessarily *more* planning in those societies which are actually termed "planned economies" or "planned societies" than may be found in those societies ideologically opposed to extensive state intervention in social life and to any over-all program of social planning. In short, *views* about planning, pro or con, are not the only element to consider in determining whether or not planning is actually taking place, or what its results may be. I think this has been brought out in various papers describing the advanced degree and techniques of planning in Western Europe which underscored that the dichotomy of planned and market societies clearly needs much qualification these days. Socialist societies are often not as planned as some may think who have never lived in them, while capitalist societies are often far more planned than they would like to acknowledge.

Paradoxically, a rigid belief in planning and its superiority to non-planning for economic growth becomes one of the irrational factors limiting the operation of that rationality upon which real planning must rest. In the name of planning and its superiority, whole groups of people, economically useful but ideologically suspect, may be moved, eliminated, or, to take a specific Egyptian case again, pressured to leave the country, as in the case of the Egyptian Greeks, Armenians, etc. The interests of the present generation may be severely limited or sacrificed in favor of the presumed welfare of some future generation. Large-scale planning, tied to extensive state intervention in many aspects of social life, has often led to an unrealistic euphoria that everything bigger is automatically better, whether in the given case this is rationally so or not. Soviet Russia's early failures with very large tractors and combines may be contrasted with Communist China's reliance today on "undertaking mainly the small-scale projects", "refraining from greediness for large-scale projects in foreign style", "applying indigenous methods", "utilizing waste materials for useful purposes", "repudiating the bourgeois style of doing things on a big scale and according to foreign rules and regulations", "self-reliance", and so forth. Even if, in this case, empirical virtue arises only from hard necessity, still it shows some level of rationality, albeit the ideological component in Chinese economic affairs remains very high.

Parallel to the view of some planners that everything *big* is automatically better is the equally irrational assumption that everything *new* is preferable to the old. (Here China does not escape.) The consequent neglect and disruption of traditional ways, labelled backward and reactionary before they are even fully understood in many cases, is by now an all-too-familiar story to social scientists. They have tried frequently to point out the harm, needless wastage and unnecessary destruction such ideological, as opposed to pragmatic, views of planning induce.

The same points could, of course, be made about the ideology of non-planning which, especially in the early part of this century, aggravated economic crises and slowed needed social change in the West. The general conclusion this suggests is that, taken as *ideology*, either planning or non-planning leads to a less rational handling of the problems of social life. It makes for rigidity of thought instead of a pragmatic or what Weber called a "zweck-rational" approach to the grasp of reality. But this too is not the whole story.

Precisely because it *is* non-rational, ideology may motivate men highly and hence have positive, rational consequences in a given situation, another of the paradoxes we have to keep in mind. For example, it is just in many *planned* societies (or perhaps it would be more accurate to say *would-be* planned societies, for planning in them is more often an aim than a reality), places such as Cuba or China, that the absence of material incentives to offer workers for increased production is met, in part, by a sense of social participation, ideological commitment, nationalist fervor, social honor, etc. Instead of bread or rice, there are political rallies. Instead of earning bicycles, one earns public approval. Given the actually stringent economic situation, such non-rational ideological elements become quite rational. So it is not an easy thing to say this or that element — planning or no planning — is rational or not. It depends on the total situation and often the factor may indeed be both rational and non-rational at once. Ambivalence is not limited to the field of psychology.

Let me close this section on the empirical level of planning by referring to two further matters of interest. One is the discussion which has revolved around what has come to be known as the Liberman approach to problems of planning. As is well known, Professor Liberman of Kharkov University stressed that, with higher levels of Soviet economic development, new methods of planning had to be initiated to give a greater weight to economic efficiency, decentralization of economic decision-making, profitability, the qualitative rather than merely quantitative character of the product, orientation to consumer demand, etc.

In a speech delivered in Cairo University in Feb. 1967, Professor Liberman noted, "We came to the conclusion that the previous system of rigid centralized planning had not served the interests of economic progress in a proper way at a new stage of development", and he called for increased autonomy in decision-making for the plant manager who would then be able to make direct contracts between the producer and the buyer. "Without direct contracts, we will have neither effective plan, nor efficient enterprise."

Naturally enough, such a pragmatic approach to planning immediately met with ideological objections and was termed "non-socialist", while Dr. Liberman replied that "scientific planning has nothing to do with such primitive assignment of quotas" and so on. Although he seems to have been convinced that planning was only possible under socialism, he tried to make Soviet planning more flexible by introducing market elements of incentive, private contracts, prices geared to the market, profitability, competition between plants, etc. And he envisaged ultimately "the compatability of centralized planning with direct contract relations, as a form of an organized market." I do not wish to enter into all the arguments around these proposals but merely to point out that, once again, they show the difference between pragmatic and ideological approaches to planning and, at the same time, the interplay of these two elements.

Indeed, I think it is easy to predict that planning will always, sooner or later, come up against this problem of whether its approach is to be more ideological or more pragmatic, and in the latter case, then, more oriented to "socialism with a human face". One can expect that in every planned society, one will find proponents of each position. Nor is this a problem only at advanced levels of industrialism for I think we can detect the same elements of ideology versus pragmatic approaches to planning in the battles between Mao Tse-tung and Liu Shao-chi.

My experience in Egypt provides further examples of the recurrent problems and typical difficulties experienced by planners in developing countries. Thus, for example, Dr. Abdel Meguid, the Director General of Regional Planning of Aswan, reflected the thinking of many persons in developing countries when he asserted in September 1966 that "in most developing countries, because of economic, social and political realities, the free market and the capitalist entrepreneur are not the relevant 'appropriate institutions'." I think one may argue about his assumptions but his is surely a common view. He went on to note that most developing countries have established national planning agencies. "The precise nature of these institutions varies from one country to another, but they are usually responsible at least for setting objectives, and guidelines, and, in some measure, for seeing that specific projects fit the guidelines and will contribute to satisfying these objectives."

Of course, the over-all plan has to be supplemented by a complex of subplans and, as he noted, this job is "frequently delegated to the various central ministries, each responsible for its own sector." And here the troubles multiply. For these sub-plans, the "real bricks and mortar of development planning", require risk-taking, speed, imagination and creativity, an intimate knowledge of local conditions and personnel, etc., all of which are not the typical characteristics of the central bureaucracy. And so Dr. Meguid somewhat plaintively notes, "What is needed is an institution created specifically to play the entrepreneurial role in the socialist society" so that one can provide for "the vital 'search-discover-exploit' risk function which is so important in the development process." And he thinks that he has been able to solve the task of supplying this "missing ingredient" through the establishment of the Aswan Regional Planning Agency, which "can identify with the local people", is inter-agency in scope, flexible in structure, and in general, is able to take on the Schumpetrian role of "innovator".

I have tried to show in these two examples of the difficulties faced by practicing planners that there is always an interrelation of the pragmatic and ideolological levels in planning and that this inevitably brings about the same recurrent problems as planners attempt to gain the advantages of spontaneity, creativity, adaptability and freedom so as to avoid rigidity, stagnation and that divorce from social reality that centralized, bureaucratic planning inevitably entails. Conversely, if this had been a paper on market societies, I would have shown how they are inevitably drawn to try to minimize the risks inherent in the market through such devices as monopolies, adminstered price structures, built-in obsclescence, market research, conglomerates, etc.

In short, each type of society tries to overcome its built-in difficulties and to compensate for its inadequacies in those areas where it is weakest. This gives the appearance to many of the convergence of systems but I would caution against assuming that this is, in fact, the deeper reality. I would suggest, instead of the optical illusion of converging tracks, that we are looking at two boxers who adapt themselves to each other's style so as to be able to box more effectively. However, this problem lies outside my present scope, and so I cannot pursue this intriguing matter further.

Once again we end in a paradox. In the case of market societies, efforts to compensate for excessive individualism at the public expense, to reduce the inherent risks and uncertainties of the market, to meet wider social goals such as defense and welfare rather than the narrow eccnomic ones of capitalist entrepreneurs such as profits or growth, etc. — these all lead to some degree of state planning, which is, in that context, rational. Conversely, in planned societies the need to overcome centralized bureaucratic decision making, to pay attention to consumer as well as state interests, to reward initiative, to set prices rationally and not just by administrative fiat, etc. — all these requirements tend to bring about market features which, in that context, too, is also a rational development.

Should we conclude, then, like Candide, that "all is for the best in this the best of all possible worlds?" Such optimism would be premature, I think, for we must now turn our attention to the problems of rational and non-rational elements in planning as an ideology.

II.

Seen by its advocates, planning is a more rational way to organize social life, especially the economic sphere which is said to suffer from an "anarchy of production". Planning, it is alleged, increases the possibilities for human welfare. Putting it crudely, then, "planning" is simply another way of referring to "socialist societies" and no doubt, this is one of the reasons for its choice as a theme of this Congress. As such, planning is then not a description of some aspect of reality but a belief, a political program, an ideology. (Obviously, the same remarks could equally well be made about the term "unplanned" or "market based society".)

We have tried to show that the empirical evidence does not bear out these claims for the superiority of planning. We have now to inquire how these claims arose.

The curious fact is that the founder of modern socialist theory, on which much of contemporary planning supposedly rests, Karl Marx, had himself very little to say about planning, as everyone knows. Indeed, Marx made a point never to concern himself with the *practical* problems, as he thought of them, of socialist planning, such as how it would function, what problems it might face, etc. He typically dismissed those who had such interests with the epithet "utopian". Now among the number of "utopian socialists" so cavalierly set aside was St. Simon, from whom in fact Marx seems first to have learned about socialism and who, unlike Marx, had a great and practical interest in how the new industrial order would work, what its requirements were and who would run it. St. Simon was perhaps the first to appreciate fully that a new industrial system, with its own special characteristics, was coming into being and would predominate over the earth. (In many of his insights about this new reality, I think it is easy to show that St. Simon was far less utopian than Marx and had a greater grasp of the coming industrial age and its problems.)

In agreement with Max Weber and unlike Marx, St. Simon saw a continuity between capitalism and socialism (although continuity, I should like to underscore, is not to be confused with convergence, a different matter). Hence one of St. Simon's slogans, which easily could be a headline in the press of many a planned society of today, was: *Politics is the science of production*. From this, it followed, of course that the managerial-engineers should be the new ruling class. Based on their technical knowledge, their rational grasp of industrial problems and possibilities, they would form the new elite, assisted by the priests of the new humanity, as St. Simon outlines in the *New Christianity*, his last work. And under the guidance of these priest — engineers — savants, all men would be directed toward "the great goal of the most rapid possible improvement in the lot of the poorest and most numerous class."

As one of the earliest ideologues of a planned society, St. Simon stressed class cooperation and social harmony based on a mutuality of interests, rather than Marx's apocalyptic visions of class conflict and an ultimate historical Doomsday. And he appealed to the self-interest of the rich, pointing out that "in increasing the happiness of the poor, (the rich) will also improve their own condition." Or put in modern economic terms, St. Simon saw that as national income grows, there is more of the economic pie for everyone. (What he did not see is how to

guarantee that *in fact* the pie does *get distributed* if the lower classes have no political power, a recurrent problem in planned societies.)

The modernity of St. Simon' views shows up in his use of economic growth as the criterion for judging social orders. Thus, he attacks the Catholic Church not on theological grounds so much as for not having developed the Papally owned lands! The Church is condemned not for its religious ideas but for perpetuating economic stagnation. "Just travel around Europe," he writes, "and you will see that it is in the Papal States that the administration of public interests is the most defective and the most anti-Christian. The considerable lands, forming part of the domain of the Holy Father, which formerly brought in abundant crops, have become pestilential swamps through the negligence of the Papal governement."[2] And how could it be otherwise, he continues, seeing that the Church these days "has become heretical because it cultivates only theology and has let itself be surpassed by the laity in the arts, in the exact sciences and with regard to industrial capacity."

Again, St. Simon sees the Church as a progressive force so long as it promoted an aristocracy of talent (or, in sociological terms, so long as it promoted an *open* class structure based on *achievement*) and tried to reduce the importance of the aristocracy of birth (i. e., to reduce the *ascribed* elements in the status basis of the stratification pattern.)

Far more clearly than Marx, St. Simon saw that the new planned and industrialized order would require not the *abolition* of classes (truly a utopian idea) but a change in the basis of stratification from ascription to achievement, from family and hereditary elements to education, talent, or ability — all points on which sociologists would generally concur these days. Perhaps St. Simon's utopianism is rather to be found in another direction for, like the French *philosophes*, he had an unreasonable faith in reason and looked toward the eventual total rationalization of life on the globe with the creation of one human society, one human race and one universal social order. All of this to St. Simon was inevitable.

It is this assumption about the need to rationalize not only production but *all* of social life that is one of the hallmarks of socialists from St. Simon to Marx on. It has always seemed eminently reasonable to them that the rational organization of human life will eventually extend to every corner, thus marking the final triumph of human reason. This view, even shared incidentally by Max Weber, assumes that modern societies of every sort are inherently driven to an increased rationalization of thought and social life, to an increasingly self-conscious setting of ever-expanding goals of social welfare, and to an inevitable and endless industrial growth. All this, it is concluded, must sooner or later result in a planned society. These have certainly been the assumptions of many planners and social scientists. Again, we point to Weber's view of the increasing rationalization of the modern world in every sphere, from music to economic production, from law to religion, etc. and his prediction, as a consequence, that the evolution of the social system of capitalism would inevitably lead to socialism by way of a growing bureaucratization. As most aspects of life become bureaucratized, an eventual universal rule of bureaucrats in charge of a centralized, planned society would result. Socialism

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[2] The translations of St. Simon are the author's.

would come about not through the victory of the proletariat but through the victory of the bureaucrats. This has equally been the assumption, even when they violently attacked the outcome, of such writers as Orwell, in *1984* and *Animal Farm*, or Aldous Huxley, in *Brave New World*. But are these assumptions correct? In our latter remarks, we wish to address ourselves to this problem.

Obviously, planning is a mode of orientation to life which involves many levels of assumptions. Some of these assumptions, such as an orderly flow of time, for example, or Newtonian space, or the value placed upon rationality, the emergence of secular society, forms of economic motivation, etc. have been themes of the life-work of Max Weber, and as such, are familiar to sociologists through Weber's exploration of the unique features of Western historical life. Others, such as the relation of the nuclear family to economic development, have been more recently explored. Others, no doubt, still await discovery and elucidation.

But even the most casual survey of history, not to mention deeper analyses as Weber's, shows that such values as general social welfare, science, rationality, industrialism and its discipline, etc. are *not* the assumptions by which most men have generally operated in life. Other categories of ordering life — faith, heroism, magic, military prowess, lineage, salvation, etc. — have often predominated. Even the sense of an *ordered* and *homogeneous time* (an obvious precondition for planning) is by no means found to be universal. As the President of our Working Group, Dr. van Nieuwenhuijze, has mentioned in his article on *Muslim Attitudes Toward Planning*, for some Kabylian villagers, "Time experienced, just as space perceived, is discontinuous, made up of a series of heterogeneous islets of differing duration," quoting Bourdieu's work on the Kabyle. "The future is a void which it would be vain to attempt to seize and a nothing which does not belong to us."[3] And as Professor van Nieuwenhuijze has noted, for Muslims planning is often "a Western mode of thought and action presented for their adoption." Obviously, the values and preconditions for modern planning have not always existed. How they came into existence is a fascinating topic, again quite outside our scope except for these few remarks.

But I think it would be fair to say that we seem to be coming to an era in history in which all these assumptions, fundamental to planning, are being challenged. Planning and progress are no longer taken for granted, no longer unquestioned values, no longer unchallenged assumptions, particularly among the young. At the least, planning as an ideology is being increasingly rejected in favor of planning at a simple empirical level which is quite matter-of-fact and which does not excite any real enthusiasm such as it would if it were still an ideology. This allows therefore for a greater scope for rational criteria. Paradoxically, therefore, just because planning is less and less a matter of belief, it becomes really possible and more a fact than a promise. But it also becomes something that can be looked at coldly, judged as effective or not in terms of other values. In short, planning then becomes a mere *means, not an end in itself,* and so the questions of values are reopened. One can then consider such problems as "planning for whom? which groups? for what ends? how?", etc.

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[3] Dr. C. A. O. van Nieuwenhuijze, Muslim Attitudes Toward Planning, mimeographed, p. 12.

The eschatological aspect of planning (as ideology) is fading as, paradoxically again, it *must* before real planning can occur. For, first of all, genuine planning requires social science. It requires a real knowledge of the state of social affairs. Social planning must rest on social knowledge, a scientific grasp of what *is*, including what is happening as a result of the planning. But all this, in turn, assumes a belief in objective science, freedom of inquiry and publication, social support for research, etc. Now it is no professional secret, however, that the social sciences are *the least* developed in "planned societies"! Indeed, they are most suspect just in those societies which think of themselves as the most revolutionary. While, equally paradoxically, just in those societies which ideologically reject any form of overall planning and which are fundamentally opposed to an extensive state intervention in social life, the social sciences, with all their in-built critical apparatus, are most flourishing. And, to continue our paradox, only when the socialist societies begin to shed some of their ideological commitment to socialism and centralized planning, only just then do they begin to feel the need for social science, and its first shoots appear.

In short, once planning as ideology falls away and planning becomes a mere technical means, and therefore a rational technique, the ultimate value questions come to the fore, as we have indicated. This is what is implied in the current debates about ecology, polution, etc. They have begun to call into question of the rationality of an endless industrial advance and have started to assess its costs in terms of other human values and other social goals besides efficiency, speed, quantities, national power and profitability. And most importantly, they have called into question whether progress, total planning, endless technical rationalization, etc. are either possible or desirable as the early ideologues of planning believed. It is clear from all this that new conceptions of planning are developing.

SPÉCIFICITÉ DE LA PLANIFICATION DANS LA SOCIÉTÉ AUTOGESTIONNAIRE DE YOUGOSLAVIE

CVETKO KOSTIČ

YOUGOSLAVIE

Les caractères spécifiques de la planification en Yougoslavie résultent de la nature particulière de son développement et de la spécificité de son organisation sociale. Elle est une république socialiste, composée de six républiques et de deux provinces autonomes qui a fait, dans la période après la Deuxième guerre mondiale, d'importans efforts pour sortir de l'état arriéré séculaire et pour édifier le système social qui corresponde à sa situation géo-politique et à son développement culturel.

Pour cette raison, c'est seulement lorsqu'on aura exposé l'essence et l'importance de ses institutions *fondamentales* que l'on sera en état de comprendre le sens et les traits caractéristiques spéciaux de la planification dans ce pays.

I

Les institutions fondamentales du système social de Yougoslavie sont: propriété collective, autogestion ouvrière et commune.

Les dispositions des lois sur la nationalisation et l'expropriation, sur la réforme agraire et la colonisation, les prescriptions sur „la nationalisation des immeubles à louer et des terrains de construction" ont formé en Yougoslavie deux formes fondamentales de propriété, à savoir: propriété sociale et propriété privée. La propriété *sociale* „comprend tous les moyens de production, à l'exception des moyens de production servant au travail individuel des paysans et des artisans". La propriété *privée* existe „dans l'artisanat privé ainsi que dans l'agriculture individuelle."[1] La propriété sociale prédomine dans les villes où un dixième seulement de la propriété est entre les mains des particuliers et tout le reste est en possession de la société, tandis que ces rapport sont différents à la campagne; quatre cinquième des terres se trouvent entre les mains des paysans individuels et un cinquième seulement est la propriété sociale.[2]

Les dispositions spéciales de la loi „sur la gestion des entreprises économiques et des associations économiques supérieures par les collectivités ouvrières"

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[1] Programme de la Ligue des Communistes de Yougoslavie, Belgrade, 1958, pp. 134, 137.

[2] Cv. Kostič, Sociologie du village (en serbo-croate), Belgrade, 1969, 67.

et les prescriptions „concernant le système communal" ont donné les cadres pour le règlement des rapports et le fonctionnement de deux institutions sociales fondamentales: *autogestion ouvrière* et *commune*.

Dans le secteur *social* de l'économie la planification a subi, avec le temps, des modifications profondes. Au commencement, elle était centralisée et de caractère administratif; les principaux protagonistes de la planification dans cette période étaient la fédération, les républiques particulières fédérales et les représentants de l'État dans les entreprises, c.-à-d. les directeurs. Dans un tel système, la *bureaucratie* représentait un grand danger pour l'initiative et les intérêts des collectivités de travail ne se faisaient pas suffisamment sentir. Lors de ces planifications on ne tenait pas beaucoup compte de la situation sur le marché, ce qui produisait des répercussions négatives sur la production aussi bien que sur la *consommation et sur les rapports* interhumains dans les collectivités de travail. Après de telles expériences on passa au nouveau système, dont la tâche fondamentale consistait à supprimer les tendances bureaucratiques, à éveiller par une vaste décentralisation et par un système édifié de *l'autogestion* large, l'initiative et l'intérêt des particuliers et des collectivités de travail. Plusieurs lois réglant la matière de planification on été promulguées ou bien sont en cours de préparation. Parmi ces dispositions des lois particulièrement importantes sont celles sur les protagonistes et les buts de la planification, ainsi que les prescriptions sur la coordination des plans établis par différents protagonistes de la planification.

II

Les protagonistes de la planification en Yougoslavie sont:
1) fédération,
2) républiques socialistes et provinces autonomes,
3) commune, et
4) entreprises et organisations économiques socialistes.

Les *buts* du plan sont:
1) accroissement du standard de vie, des connaissances et aptitudes des travailleurs,
2) élargissement de la base matérielle du travail associé,
3) développement des rapports de travail socialistes,
4) réalisation de l'égalité en droits entre les peuples et les nationalités, et
5) renforcement de la capacité défensive du pays.

Ce sont les buts essentiels de tout plan et chaque protagoniste de la planification est tenu de les observer, de même que chacun d'eux doit s'efforcer, dans le cadre de ses compétences, de réaliser, par le plan et par son exécution, aussi certains buts spécifiques.

Pour cette raison les plans de la Fédération comprennent particulièrement:
a) tendances du développement de l'activité économique et sociale de toute la communauté;
b) politique générale du standard de vie, de l'emploi et des cadres;
c) rapports fondamentaux dans la distribution du produit social et du revenu national;
d) politique fondamentale des rapports économiques avec l'étranger;
e) politique du développement accéléré des régions sous-développées, et

f) coordination des efforts pour le renforcement de la capacité défensive et de la sécurité du pays.

Par conséquent les plans de la Fédération déterminent la politique du développement *à long terme* du pays et de ses activités particulières pour une période décennale. Outre ces plans à long terme, la Fédération établit également les plans à *terme moyen* pour une période quiquennale, ainsi que la résolution de l'Assemblée nationale fédérale sur la politique du développement social et économique de la Yougoslavie pour *une année* déterminée.

A l'élaboration des plans de la Fédération prennent part aussi les républiques socialistes particulières, les provinces autonomes, les communautés d'intérêts et les organisations scientifiques et professionnelles. Les plans de la Fédération sont examinés, discutés et adoptés à l'Assemblée nationale fédérale en trois étapes. Dans la première phase, l'Assemblée nationale fédérale proclame les *directives* pour l'élaboration des plans, dans la seconde elle examine les *projets* des plans qui on été préalablement discutés en public et dans la troisième phase l'Assemblée nationae fédérale considère la *proposition* définitive des plans et *décide* de leur adoption.[3]

Les républiques socialistes, les provinces autonomes et les communes établissent leurs plans qui reflètent leurs problèmes *spécifiques*. Ceci se rapporte également à la planification dans le cadre des *entreprises* du secteur socialiste et des *organisations* économiques. Parmi les buts de leurs plans il faut mettre particulièrement en relief:

a) réalisation et coordination des intérêts particuliers et communs;

b) stimulation de l'initiative de travail et de l'initiative créatrice des particuliers et des groupes de travail;

c) création des conditions aussi favorbles que possible pour le développement des forces de production;

d) création des conditions de travail égales pour les particuliers et les groupes de travail;

e) réalisation du principe de la distribution selon le travail et

f) développement des rapports sociaux selon le principe: „de chacun selon ses capacités, à chacun selon son travail".

Ces plans doivent concrètement comprendre aussi les *mesures* au moyen desquelles il faut réaliser les buts, définis par le plan et coordonnés avec ceux des plans établis par les autres protagonistes de la planification.

III

Les protagonistes de la planification établissent *indépendamment* leurs plans et programmes de leur développement dans le cadre de la Constitution, des lois et de leurs propres statuts. Ils établissent également eux-mêmes, la *méthodologie* pour l'élaboration de leurs plans, mais lors de l'élaboration de leurs plans ils doivent

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[3] Conseil Exécutif Fédéral, Projet de la Loi fondamentale sur la planification sociale (en serbo-croate), Belgrade, le 13 mai 1970, p. 7.

observer „le minimum de méthodologie commune" décrété par le Gouvernement fédéral.[4]

Par conséquent, les normes de la planification ont été établies en conformité avec la structure politique et sociale de la Yougoslavie[5] et elles tiennent strictement compte des spécificités de son développement et des buts de sa communauté globale. Pourtant la réalisation des plans et la réalisation des buts prévus par les plans ne dépendent pas uniquement des normes et des protagonistes particuliers de la planification, mais aussi de nombreux autres facteurs, tels que: le marché, la politique de la fédération et des républiques particulières, le comportement des entreprises et organisations congénères, le crédit, la situation monétaire, etc. Pour cette raison, la *consultation* et l'*accord* des protagonistes intéressés de la planification et de la mise en effet des plans sont indispensables et nécessaires, ainsi qu'une intégration assez large des entreprises congénères. Les plans ne seront réels que si l'on tient compte aussi des facteurs susmentionnés et si les plans sont coordonnés en ce qui concerne leur validité et leur action.

Cette analyse des caractères particuliers de la structure sociale et de l'évolution de la Yougoslavie montre déjà les nombreuses spécificités de la planification dans ce pays. Ces spécificités sont le résultat de sa situation spéciale et de son évolution sociale ainsi que de la création des institutions sociales fondamentales: propriété sociale, autogestion et commune. Sa société *autogestionnaire* s'est proposé les buts généraux qui doivent être réalisés au moyen des plans établis par divers protagonistes de la planification: fédération, républiques socialistes et provinces autonomes, communes et entreprises socialistes. C'est un modèle spécifique de planification avec assez de traits caractéristiques, en changement constant, car il est exposé aux influences de différents facteurs dont certains agissent même en directions opposées.

[4] Rédaction des informations économiques fédérales, Réforme (publication en serbo-croate, de l'agence «Tanjug»), No. 4, Belgrade, le 17 avril 1970, p. 11.
[5] Symposium scientifique, Directives pour le développement *social dans le socialisme* (en manuscrit), Belgrade, 1968, p. 18 ff.

VI. MODERNIZATION AND DIFFUSION
OF INNOVATIONS

VI. MODERNISATION ET DIFFUSION
DES INNOVATIONS

IMPACT OF FACTORY PRODUCTION ON TRADITIONAL
SOCIETIES: MODERNIZATION, SOME
ALTERNATIVE VIEWS ON INDIA

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INDIA

Introduction

In exposing himself to the growing literature on "underdeveloped and deve-
loping countries", a person coming from one of these countries cannot be but
troubled by statements such as this : "A great economic, social and political trans-
formation is sweeping the underdeveloped countries. This transformaton is mani-
fested in new aspirations and expectations, a new eagerness to plan and promote
economic growth and to acquire modern technology, a challenging of age-old
traditions, the rise to power of new leaders, and the emergence of new nations"
(Staley, 1961 : xxiii).[1]

One immediate reaction to such a statement may be : "Why is this not so in
my country?" Perhaps to some extent it is, but how far down has this "sweeping
transformation actually gone? Doubt arises, even if one is generous enough to treat
such statements as well-meant and optimistic hopes of sympathetic observers.
In any event, they do serve a useful function. They stimulate one to inquire a
little further.

To a student of sociology, the inquiry takes on greater significance in consi-
dering the case of a developing nation like India which has a very low level-of-
living, a very large percentage of illiteracy, and a very low per capita income in con-
trast to a nation like the United States. Under such conditions, how do people par-
ticipate in the country's total effort at social and economic development? Logic-
ally, the question becomes, "To what extent are these factors (i. e. social and eco-
nomic development) related to industrialization?"

Industrialization and development, as used here, refer to basic stimulus and
response, presumably elements of an interrelated complex of social and economic
changes that take place in a community as it progresses from a traditional to a
modernization status. Modernization is used here to designate socio-cultural trans-
formations characteristic of the kind of development that results from the factors

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[1] This passage is quoted merely as an illustration. Similar statements can be found in innu-
merable prefaces and introductions, especially to studies pertaining to developing countries.

and processes that are distinctive of the contemporary industrial world (Steward, ed., 1967). The contemporary world culture has a vast repertory of scientific knowledge and technological application of science in industry, transportation, communication, health, and other fields (Steward, 1956: 27). All nations contribute in some degree to this culture, and under certain preconditions, any may draw from it. This transition from traditional societies to modernization has begun in almost all underdeveloped countries and in some it has gained momentum. This is not to say that fundamental change will come quickly to countries, such as China and India, that have massive agricultural populations. Yet the quest for economic improvement is ubiquitous and its consequences far-reaching.

Relevant to the question of change are recurrent patterns in ideologies such as Gandhism, Marxism-Leninism, Gamalism, and Shintoism (Matossian, 1958). The recurrent patterns can be accounted for by the similarity of context in which the ideologies have emerged. This context implies the similarities of industrial societies, and these various ideologies assert that newly developing areas will inevitably move toward a common social model as they industrialize. Despite the differences in political systems, Russia resembles the "capitalistic" industrial countries (Inkeles and Bauer, 1959). There has been uniform appearance of the small family system as economics become industrialized (Rose, ed., 1958). Kerr has argued for the predictability of the future industrializing countries on the common characteristics of advanced countries: This particular history gets mainly from the future into the present — what is currently happening comes from what is to be. The future is the cause and present is the effect (Kerr, 1960: 358).

However, we cannot expect the search for uniformities in the impact of industry to be totally successful in view of the crude facts of variability. Sociologists have been in sufficiently close touch with anthropologists to be aware of cultural diversity. Singer (1960) has criticized the uniform model of industrialization for developing societies, and has argued for the diversity of social evolution. Feldman and Moore (1960) have also questioned the rigidity of the organizational and normative model for "commitment" to industrialization. Herskovits (1960) argued that the generalization across patently diverse cultures in transition was to be found in process of change rather than in precise forms of social organization. Moore (1963) argues that change is an intrinsic characteristic of all societies and that the his toric paths to the present inevitably and significantly affect the continuing paths to the future. The anthropologist Turney-High takes the even more extreme position that there is a "telestic inherency" in technical, social, and cultural change, indeed in all types of change in the universe (1968 : 53-74).

Polarization Theories and Their Limitations

Generalization is both important and hazardous (Moore, 1961). However, it seems clear that industrialization is not only a goal widely shared in underdeveloped areas, but a cause of economic development as well. Industrialization is equated with factory production (Udy, 1959), and factory production requires institutional transformation in the direction of "impersonal" markets, not only for goods but also for labor. Wherever transportation facilities and communications permit in Africa, Asia, and Latin America, there is evidence of the gradual or abrupt transformation of traditional trading relations (Holton, 1960). This, in turn,

involves increasing specialization and relatively rapid change in the occupational structure. Furthermore, it involves significant modifications of the social system, institutional adaptations, and new forms of demand for labor which represent radical shifts in social roles and are intrusive in the traditional structure (Parsons and Smelser, 1956). Generally, in past world history, change has been largely unintentional and often simply a response to natural or social crisis. It is a unique feature of underdeveloped societies that most social and economic change is planned. For this change government has become the primary source of institutional transformation.

We can bring the whole development effort into spatial focus by polarizing development issues along Gemeinschaft-Gesellschaft[2] lines. Historically, reconstruction of the pattern of industrialization in the West supports a body of sociological theory which views the long sweep of social evolution as a transformation from one ideal type — rural, Gemeinschaft, traditional, "folk" society — to another ideal type — urban, Gesellschaft, modern society. There is a highly developed theory of such a presumed "impact" of industrialization (McKinney & Loomis, 1958). In the literature, however, a relatively simple polarity occurs, i. e. a set of ideal types whose component parts appear again and again in discussions about changes from peasant to industrialized society.

As with all ideal types, one is not likely to encounter an empirical example of one or the other polarity in pure form. However, such contrasts help to bring order into our thinking about long-range changes in social organization and are often utilized. Many of our notions about the transformation from Gemeinschaft to Gesellschaft, from folk to urban, from peasant to industrial societies draw their strength from the presumed parallel transformations.

The impact of "factory" upon the traditional society is supposed to flow in part from the nature of its internal organization. This organization is supposed to be in sharp contrast to social norms and structure of the surrounding traditional society (Braibanti and Spengler, 1961). The introduction of industrialism is, of course, only one of the fostering variables. It is assumed, nevertheless, that the introduction of the industrialization system has certain institutional imperatives (Manneheim and Kerr, 1960) which are instrumental in moving a society from one end of a polarity to another; from a static, acquired-status-ridden, tradition-bound, primary group oriented, particularistic, and fatalistic society into one that is rapidly changing, achieved-status-dominated, progressive, secondary-group-oriented, universalistic, and aspiring (Lerner, 1964). In fact, the factory is presumed to embody the latter set of characteristics, upsetting thus the stable and traditional structure for modernization.

The author, however, is of the opinion that industrialization is a much more complex activity than the polarizing theories suggest. Its institutional imperatives are not nearly as strong, and there is empirical evidence that they are not moving in so orderly a fashion toward the modernization end of the polarity, as is often thought. Herbert Blumer (1960) makes the more extreme argument that

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[2] For a detailed discussion see F. Tonnies, Community and Association, translated by Charles P. Loomis, 1955, London: Routedge and Kegan Paul, Ltd.

industrialization merely provides a neutral framework for the operation of other factors, and he says: "I think that the evidence points clearly to the conclusion that industrialization, by its very make-up, can have no definite social effect. It is neutral and indifferent to what follows socially in its wake. To attribute specific social effects to it is to misread the characters; to seek in it the cause of specific social happenings is to embark on a false journey" (1960:9).

In spite of Blumer's argument, many Indians, particularly administrators and scholars supported or influenced by American advisors, have elevated the Gemeinschaft-Gesellschaft dichotomy into a principal device of social taxonomy. It appears to this researcher that it has been imposed the world over, and has divided the scholars among two groups—one concerned with rural problems and the other concerned with urban problems. Such a polarization is erroneous in principal, especially when applied to underdeveloped countries.

Some Alternative Possibilities for Industrialization

Developing economies can be conceptually "placed" as a continuum of community types that stretches from the smallest village to the largest metropolis. Communities in all underdeveloped countries, whether large or small, include a fairly broad participation in agricultural, non-agricultural, industrial, and non-industrial product efforts. Under these circumstances, underdeveloped countries have to make a spatial choice concerning the distribution of population and industrialization effort. If these underdeveloped countries follow the example of the West then the industrial activities will be concentrated in large metropolises. Other alternatives, however, could include (a) uniform distribution of industrial effort across the whole country, (b) concentration in small sized towns or centres, as is presently being done and advocated in India, or (c) village-centred industry. In considering these alternatives it is important to remember that in India, as well as most of the underdeveloped countries, more than 75 per cent of the population live in villages.

The Gemeinschaft-Gesellschaft dichotomy cannot accommodate all these alternatives. Moreover, it does not take into consideration various possible alternatives on a continuum between demographic concentration and demographic dispersion. Consequently, it can be said that this typology has only limited usefulness as a theoretical tool in planning the development of underdeveloped countries. It simply cannot take into account well-blended mixtures of rural and urban ingredients such as are simultaneously in existence in many underdeveloped countries.

The Case of India

What makes this industrialization-development issue more complicated in India is the very rapid increase in population which amounts to approximately twelve million people each year. If the development efforts of India are to succeed, the nation has to commit itself to a rapid, occupational mobility away from agriculture or what amounts to shift of most of the "natural" increase in the farm labor force to non-farm work. The Third Five Year Plan document estimated that at the end of the plan period in 1966, the percentage of farm share of the total la-

bor force will have dropped to 60 per cent from the 70 per cent of 1961. If it has happened, we do not know.

It has, however, been argued that new or expanded industrial enterprises and activities that receive workers out of agriculture should be village-centered. In this case occupational mobility presumably will necessitate little or no geographic migration. Another alternative which seems to be an unplanned development by private enterprise is "town-centered" industrialization. This involved locating factories in small and medium-sized towns, or small cities, somewhere in the population range of 10,000-100,000. This kind of industrialization represents a relative shift in the location of work places, but no shift of residence. That is, if these industrial centers are strategically located at an "average distance" from villages and there is availability of transport, incentives, and other facilities, then it is possible for many newly-employed non-agricultural workers to continue to reside in their villages. Another alternative is that of metropolitan-centered locations for industry, following the predominant Western model. It is the contention of this researcher that the latter model is least practical for India, as it would entail the most extensive and radical movement of population.

For modern India, village-centered industrialization also does not appear to be a realistic alternative for most industry, although small-scale village industries, such as hand-loom factories, have been supported and subsidized by the government. The arguments against use of the village-centered model are largely based on the fact that a village of 500, 1,000, or even 2,000 persons cannot usually provide an adequate market in manufacturing, consuming, retailing, or exporting. A single village cannot provide essential labor skills or professional, business, financial, and social services necessary for the continuity of industrial activity unless it grows larger and more complex, thus ceasing to be a "village". In short, it makes no sense technically to claim that the individual village offers a feasible setting for new industrial activity. Although the metropolitan-centered alternative was, in the past, regarded as "natural" and inevitable for India (Srinivas, 1966), in recent years there has been a decentralization trend of industry toward "town-centered" locations. Towns in the range of 10,000 to 100,000 population offer the most congenial physical setting and provide a "compromise" between traditional Gemeinschaft and Western Gesellschaft. This kind of development would reduce urban unemployment and, at the very least, would make it easier for the frustrated migrant to retreat to the relative congeniality of the village.[3] If this trend toward "town-centered" industry continues, it could become the most effective means for opening the doors of the villages to the modernization of society. The tasks of industrial construction and

[3] There is extensive literature on such reasoning. Some of the sources are: John P. Lewis, Quiet Crisis in India, 1964, Garden City; New York, Doubleday & Company, Inc.; A. N. Agarwals and S. P. Singh, The Economics of Underdevelopment, 1957, Bombay: Oxford University Press; Simon Kuznets, Wilbert E. Moore and Joseph J. Spengler, eds., Economic Growth: Brazil, India, Japan, 1955, Durham, N. C.: Duke University Press; and P. N. Dhar and H. F. Lyndall, The Role of Small Enterprises in Indian Economic Development, 1964, Bombay: Asia Publishing House.

reconstruction could be carried out without dislodging villagers from their villages.[4] This kind of interesting dualism has existed in Japan, the leading industrial nation in Asia (Broadbridge, 1966). Huge combines coexist with thousands of small businesses, and wide gaps in productivity and wages exist which are unknown in most economies of the West. In Japan, division of labor between agriculture and other sectors does not force an inevitable choice favoring the latter, and her major industrialization is closest to India's in time.

Industrial-Agrarian Integration: Theory and Fact

The conflict between integration and separation of agriculture and industry is more lengthy than their separate developments. A recent study of the depopulation of rural England reveals major difficulties in the provision of services to sparsely-settled areas. In this study, the position is taken that rural communities ought not to be "preserved", but to be "developed" (Saville, 1957: 30). After approximately a hundred years of experience with metropolitan-centralized industrial manufacturing, a new integration of field and factory was called for as early as 1913 in America. P. Kropotkin wrote: "It was pointed out. . . that the greatest sum total of well-being can be obtained when a variety of agricultural, industrial and intellectual pursuits are combined in each community; and that man shows his best when he is in a position to apply his usually varied capacities to several pursuits in the farm, the workshop, the factory. . . instead of being reveted to life to one of these pursuits only" (1913: X).

Because of such thinking in America during the past 40 to 50 years there has been a trend to decentralize industry. The net impact of these changes has been such that an estimated 30 percent of all industrial plants established in the 1950's were located in small towns or in open country near small towns of less than 10,000 inhabitants (Rural Electrification News, 16, 1951: 12-13). Robock (1952) reported that rural industries constitute an important source of employment for farm people.

In the United States, because of rapid transportation, communication, and mobility, the urban-oriented pattern of life has diffused into rural areas, and industrialization has invaded their domain. For rural people this diffusion has meant increased income, a higher level-of-living, part-time or full-time employment away from the farm, and, most important, employment for the farm youth who would otherwise seek work in large cities. If industry brought secondary and contractual relationships into local social organization, rural workers brought a traditionalist ethic to their work plants. If industry brought ethics of competition, it also provided a network of urbanized social organization for the community. And in the author's opinion, this kind of development has Gesellschaft or rural-urban ways of life into a new cultural universal "agro-industrial" type.

The process of industrialization in rural areas tends to affect all members of the local community. Plants have utilized large number of rural people in unskilled

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[4] A very interesting and exhaustive analysis can be found in Carl C. Taylor, Douglas Ensminger, Helen W. Johnson and Jean Joyce, India's Roots of Democracy, 1965, Calcutta: Orient Longman's Ltd., Ch. 15.

and semi-skilled work. Most of these new industrial workers have had little or no previous technical training. Plant employees in rural areas are mostly commuters. Using bicycles, buses, trains and automobiles, employees have little difficulty in commuting from surrounding areas. It has provided an opportunity for subsistence farmers to take part-time or full-time non-farm employment, and the most tangible effect has been an increase in family income. Some have viewed part-time farming with part-time industrial work as a mechanism for facilitating the shift from agrarian to urban occupations.

Within the last ten years a number of specific research inquiries have been made in the United States to delineate the differential characteristics of plant-employed families and non-plant-employed families in rural areas. These studies report difference in level-of-living, family income, community participation, and attitudes toward occupational mobility between plant employees and non-plant-employees.[5]

From these studies it has been observed that plant workers are younger than other residents in the community. A greater proportion of plant than non-plant workers were under the age of thirty. This is to be expected, as high birth rates in rural areas generally result in an excess cohort of people in young age categories.

These studies further show a substantial increase in consumer spending by plant workers. There is, especially, accelerated purchasing of household equipment, automobiles, and other commodities associated with a higher standard of living. Plant workers indicated that in the work situation, job security and steadiness of employment were the two factors most important to them. Respondents were asked what they would do if they were laid off from their factory employment. In most cases they indicated that they would seek other plant employment rather than return to full-time agricultural employment. Research has indicated that industrialization in rural areas is generally benefical to local population. Resistance to such industrialization is slight and sometimes non-existent. Industrialization in rural areas of the United States has effectively transformed surplus elements of rural labor force from farm to non-farm employment, without uprooting the workers from their rural residence.[6]

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[5] These studies are: Sheridan T. Maitland and George L. Wilbur, Industrialization in Chickasaw County, Mississippi: A Study of Plant Workers, 1958, Bulletin 565, State College; Mississippi: Mississippi Agricultural Experiment Station; Alvin L. Bertrand and Harold W. Osbourne, Rural Industrialization in a Louisiana Community, 1959, Bulletin 524, Baton Rouge: Louisiana Agricultural Experiment Station; John R. Christiansen et al., Industrialization and Rural Life in Two Central Utah Counties, 1959, Bulletin 416, Logan: Utah Agricultural Experiment Station; and T. R. Black et al., Rocket Age Industrialization of Box Elder County, 1960, Bulletin 420, Logan: Utah Agricultural Experiment Station. These studies are summarized in U. S. D. A., Rural Industrialization, 1961, Bulletin 252, Washington: U. S. D. A.

[6] These conclusions are drawn from: J. M. Stepp and J. S. Blaxio, The Labor Supply of a Rural Industry, 1948, Bulletin 376, Columbia: South Carolina Agricultural Experiment Station; Wade H. Andress et al., Benchmarks for Rural Industrialization: A Study of Rural Development in Monroe County, Ohio, 1960, Bulletin 870, Wooster: Ohio Agricultural Experiment Station; Ward Bauder, Effects of Industrial Development on the Agricultural and Urban Sectors of Iowa Community, 1964, Bulletin 711, Iowa City: Iowa Agricultual Experiment Station; and Wade H. Andrews and Ward W. Bauder, Effect of Industrialization on a Rural County, 1967, Bulletin 407, Wooster, Ohio: Ohio Agricultural Research and Development Centre.

The process of industrialization and modernization in India will inevitably involve changes in the value system, as well as economic, political, and social changes. In traditional societies like India, the value system tends to be what Howard Becker (1957) calls "prescriptive". A prescriptive system is characterized by the comprehensiveness and specificity of its value commitments and by its supposed consequent lack of flexibility. When such a society is faced with modernization, it must make major changes in institutional structure toward what Becker calls a "principal" type of value system. This implies that society must develop economic, political, and social ways of life in which specific norms may be determined in considerable part by the functional requisites of relevant social subsystems (Merton, 1968). The question now is whether the value orientation of the Indian people contributes or interferes with a change from "prescriptive" to "principal" value systems.[7]

Among underdeveloped nations, India may be the only civilization which has maintained a cultural identity while modifying very little of its structural framework (Eisenstadt, 1965: 659-673). The Indian civilization, says Eisenstadt, has been influenced by modernization due to its dissociation with traditional cultural orientation in the political sphere. The British found it less difficult to justify Western symbols, because they could be made legitimate through the classical Indian political structure. He goes on to say further that in the system of stratification and political institutions, such elements as the casts, the village, and the Communication network were highly autonomous. This, perhaps, has stimulated the modernization process.

It appears that institutional change for modernization can be more effectively manifested by preserving and utilizing cultural or structural symbols which enable a society to develop new social forces without the negative effect of destroying the established structures.[8] Along with India, Japan and Turkey seem to be more successful in transformation, whereas China and most of the Islamic countries have not been so successful.[9] From the above argument, it can be hypothesized that India is on its way to modernization in terms of indigenous institutions and values which are reasonably compatible with the process of industrialization.

Conclusions

It appears to the author that there are alternatives in the adjustment of an agrarian society to industrialism not present in the histories of modern Western nations. Most Western scholars have assumed the inevitability of Westernization

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[7] For a discussion of value system in India, see Max Weber: The Religion of India, translated and edited by Hans H. Gerth and Don Martindale, 1958, Glencoe, Illinois: The Free Press; and Max Weber, The Theory of Social and Economic Organization, edited by Talcott Parsons, 1960, New York: The Free Press.

[8] See S. N. Eisenstadt, Modernization: Protest and Change, 1966, Englewood, N. J., Prentice-Hall, Inc. for a theoretical discussion of the issues involved.

[9] For Japan, see D. C. Holton, Modern Japan and Shinto Nationalism, 1947, Chicago: Chicago University Press; for Turkey, see Dani Lerner, The Passing of Traditional Society, Modernizing the Middle East, 1964, New York: The Free Press; for China see F. Schurman, Ideology and Organization in Communist China, 1966, Berkeley: University of California Press; and for India, see H. N. Sinha, The Development of Indian Polity, 1963, Bombay: India Publishing House.

with increasing industrialization of underdeveloped countries. They assume, for instance, that with industrialization, specific kinds of changes occur in religious, familial, occupational, and economic forms of social organization which would parallel changes which accompanied Western industrialization. They have tried to incorporate into theoretical conceptualization agrarian transition to industrialism per se. Among concepts expressed by such scholars are Durkheim's mechanical and organic solidarity, Toennies' Gemeinschaft and Gesellschaft, McIver's mass society, and the works of Weber and Tawney on the mutual influence of religion and economics in the growth of rational capitalism. However, Western cultural history need not be repeated in these underdeveloped countries as they move toward industrialism. Those who are concerned with non-Western societies should consider industrialism as a distinct phenomenon in its own right, with some similarities but many differences.

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ON THE ROLE AND DEVELOPMENT OF PROFESSION
IN THE SOCIALIST SOCIETY

GÜNTHER BOHRING
GDR

Individual occupational activity, in its concrete form simultaneously both result and process of social integration (under certain circumstances also disintegration), doubtlessly counts as part of this. From occupational desires and ideas via the seeking and selection of occupation to occupational training and commencing of occupational activity plus further qualification or even changing of profession — the path of work activity is always at the same time a concrete process of social integration, i. e. a self-incorporation in certain structures of social relationships. This self-incorporation sets the conditions for the adaptation of norms and values of the social system in question and includes the problem of its influence on the behaviour of the individual. When a person decides upon a certain occupation this also touches an important factor of his social position and his relationship with social needs and interests is determined in a concrete way.[1] With respect to concrete types of professional activity society has quite definite expectations regarding quantity and quality of contributing efforts in solving the tasks before the whole of society. In a modern society with its division of labour this contribution of achievement can only be realised through differentiated and specified labour activity, that is occupational activity for which certain capacities, knowledge and preparation through training are imperative. For the individual this means accepting social expectations when deciding upon an occupation and when practising his occupational activity and identifying himself to some degree or other with the system of concrete norms and values.

The elimination of the exploitation of man by man in the socialist society of the GDR, is the decisive basis upon which the occupational activity of the individual worker can be established as a direct contribution of achievement for the whole of society. This is expressed in a series of new behaviour types and motive structures. Manifestations of this are, by way of example the development of the innovators' movement in socialist industry, the competition for the title of: "Kol-

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[1] "Although not identical with it the profession is a main point in the social position of people in society." (Wörterbuch der marxistisch-leninistischen Soziologie, Dietz Verlag, Berlin, 1969, p. 224/225.

lektiv der sozialistischen Arbeit" (Team of socialist work), the number of work and research teams and others.[2]

Intensive efforts towards professional qualification have become typical today of the working masses of the GDR. This comes to light in a) the drive in young people in all cases to learn a definite profession after their school years selected by themselves; b) in the readiness of many workers to seek more professional training; c) in the pains taken by numerous workers already having completed professional training to continue expanding professional knowledge through qualification courses. In the process of forming a developed socialist social system the task, amongst other things, of every young person learning a profession after conclusion of secondary school was posed.[3] In 1968 95% of all school leavers were already taking up professional training.

An essential condition for occupation being an effective factor in integration is systematisation of professions and the content of occupations requiring training. The objective processes of the social division of labour plus the scientific and technological revolution have already brought significant changes in the system of occupations and in their content and have brought to light a series of tendencies. In latter years a trend was clearly visible of a decrease in the number of occupations requiring professional training. In 1957 there were 972 professions. While at the beginning of the sixties training was possible for approximately 650 professions, the decree on the systematisation of occupational training of 1967 provided for only 455 professions.[4] The new rationalisation of professions requiring training in 1968 only turned out in contrast to this 389 professions requiring training (as against 1967 89 professions were done away with and 23 put in their place).[5]

A specific new appearance is the emergence of basic professions. They are an aid in "guaranteeing necessary training preliminaries and professional deployment".[6]

[2] Ref. Statistisches Taschenbuch der DDR 1970, Staatsverlag der DDR, Berlin, 1970.

In this connection we refer merely to the development of the innovators movement; the number of innovators rose from 473,000 in 1961 to 642,000 in 1969, amongst profession people the proportion of innovators changed from 12% in 1961 to 14.6% in 1969.

[3] Cf.: Ulbricht, W. Social development in the GDR.... (Speech from the VIIth Party Congress of the Socialist Unity Party of Germany, April 1967), Dietz Verlag, Berlin, 1967, p. 247.

[4] Gesetzblatt der Deutschen Demokratischen Republik, Berlin, 25. Oktober 1967; Sonderdruck Nr. 562 (Staatsverlag der DDR).

[5] Gesetzblatt der DDR, Sonderdruck Nr. 600/1968, Berlin.

[6] Knauer, A., Wissenschaftlich-technische Revolution und Berufsbildung in: Einheit, 1967, 8, p. 1018.

The author defines the concept «basic profession» as follows: Basic professions «...are modern, broadly outlined professions requiring training, whose internal structure... comprises the demands of related production and work processes as a general professional training basis whence specialised professional activity can be developed» (ibid.)

Elsewhere the same author explains: «This basic profession as a rule comprises several presently existing technologically and technically related professions, professional specialisations or of profession requiring training characterised by the technical and technological common ground of a defined production or work field in one or more branches of economy or industry.»

«Technische Revolution und Berufsbildung». Wiss. Zeitschrift der Humboldt Universität zu Berlin, 1967, p. 42.

In 1968 8 basic professions were planned as regards content and included in the systematisation of professions (these are: specialised building workers, design metallurgists, specialised machinists, maintenance mechanics for data processing and office machines, electrical engineers, specialised workers for control engineering and data processing). On the 1/9/70 13 new basic professions will be introduced including "specialised electronics workers", four basic professions in the printing industry and others.

A planned and responsible integration of the various elements of professional training and education for the basic professions is the work of several years.

In the future the qualified professions specified as basic will be of decisive significance for the professional development and lives of the majority of workers.[7] They are distinguishable through a broad outlined content of training enabling a wide range of general education as well as narrower professional specialisation thus justifying the growing demand for the availability of specialised labour. Due to the broad outline of content of the training such basic professions can be acquired by secondary school leavers from the tenth class. (According to the constitution ten years of secondary school is compulsory throughout the GDR.)

From the very beginning training in the basic professions is aimed at a general development of the capacities and capabilities of people and thereby promotes important conditions for the blossoming of personality. Basic professions are new effective forms for personality development for people in socialist society.

The demand for qualification growing with scientific and technical development, the unavoidable change in work activity and in the content and form of the work itself can be essentially more easily overcome by the workers from the broad outlined basis of the training content of the basic professions than was possible within the framework of traditional professions. That means that the profession in the socialist society has received a completely new fundamental social function on the basis of the new socialist type of work distinguished by qualitatively new characteristics as an important social structural element and significant social form of organisation.

One must certainly be rid of the concepts of professions devolving as a rule from the traditional idea of professions (especially in the case of labouring work). Here professional qualification appeared as something relatively final, the profession became factually something rigid which forced its bearer into a definite working activity and "pinned" him down mostly for the rest of his working life. If changes in the social process of work compelled a change in working activity this contradiction could as a rule only be solved by individuals making a complete switch in occupation. This process in capitalist societies is accompanied by the widespread phenomenon of depreciation of qualifications gained, contributing significantly to the "devoiding of the professional concept" so frequently described in bourgeois literature.

The development of the profession in socialist society, particularly the basic profession, shows altogether different trends, and many questions on the relation-

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[7] According to preliminary estimations it will be possible to train 70% to 75% of all apprentices in basic professions in the prognosis period.
(Cf.: Kuhrt, W. Verantwortung der Gesellschaft für die Berufsfindung der Jugendlichen, in «Einheit», 6/1970, p. 754)

ship of man-work-profession present themselves in a new light. The new type of basic profession manifests itself, as it were, as a dynamic profession. In outlining it one proceeds from the fact that "the future producer must be necessarily provided with the most effective education material for his professional activity, for changing conditions and necessary specialisation".[8] According to this a growing significance accrues to theoretical professional training. During the next decade "dynamic ability" can be expected to become the norm and rule in the professional activity as opposed to "static knowledge" as noted by the eminent scientist Prof. Dr. Thiessen, honorary chairman of the Research Council of the GDR. If these forward assessments were taken into account in outlining occupations and planning professional training then switching professions would in no way be a typical and inevitable consequence in the working lives of the masses.

The acquired basic professions, as a type of the new dynamic profession, can turn out to be quite the complete profession of a worker for a long section or for the whole of his working life. It in no way constrains him but rather provides a sturdy basis for continual acquisition of new learning, new abilities and capacities. In contrast to the traditional professions with their narrow confines which in fact are dying out all the time it is the development of the individual within his profession which becomes the determining characteristic of this new type of profession. This includes an all-round development of the personality and enables the individual to attain effectively a greater degree of achievement through his professional activity in that contribution expected by society. The empirically established high degree of identification of such groups of workers with their acquired training when they have been trained for a modern profession, i. e. for a basic profession and are practising that profession confirms this relationship which has been expounded. A continual change of profession does not in any way have to be the inevitable result of further scientific, technical and industrial developments. Apart from the fact of creating considerable economic losses for society in certain circumstances, since it is in just these modern professions where the costs of training are particularly high, a continual changing of profession can also doubtless create complications of a problematic nature for the personality development. It goes without saying that changing of profession will play a considerable part even in the future development of the socialist society. On the one hand scientific and technical development necessitates further changes of the present structure of qualification which is bound up with the "dying out" of certain professions, professional retraining and with the learning of totally new professions. On the other hand a change in profession may be made to some degree or other amongst those occupational groups trained in the modern basic professions for one reason or another. A more precise knowledge about this can only be gained after concrete empirical research. Considering the position of today and what specially concerns the present relationship the following can be said: the profession in the socialist society possesses a big significance for social integration because it is constantly changing its own outline and content. The pains taken by young people in the GDR are clearly aimed at completing some special training with a high level of qualification on the basis of which a contribution which is both useful to society

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[8] Knauer, A., Technische Revolution und Berufsbildung, loc. cit., p. 37.

and satisfying for the individual can be achieved. The typical point of view as regards a "job" in the capitalist society where security of existence is predominant and therefore the specific type of activity, its personality forming value and its general social character remain fully subdued or are even completely unknown in the socialist society.

In the present day bourgeois sociological research into professions the view is widespread that the accelerated change in science and engineering will be reflected by the ups and downs of professions which appear and disappear, therefore creating the "need for the individual to change his profession several times during the course of his lifetime" making the "training for a profession take a back seat".[9]

Such formulae in fact hardly contain any information on the changes to be expected in the structure of profession. They do, however, make clear that under the conditions of capitalist society even the prospects of the profession and its social functions can only be viewed as dependent upon the general economic and social laws ruling this society. These laws govern the quantitative and qualitative development of labour-force potential according to the requirements of the capital utilisation process, whose interests determine the social character of the professional structure, the significance of professional qualification plus the essential aims and forms of professional training. Against this background it is understandable that further development can only be viewed as "the ups and downs of professions which appear and fade out" and it seems unavoidable for the individual to have to change his profession several times within his lifetime. Otherwise expressed: in the capitalist society the profession further loses its significance as a factor of social integration, the fight for employment. which is as secure as possible even if arbitrarily chosen, overshadows aspirations of training for a specific profession and its personality forming value.

Bourgeois sociologists draw attention to the trend of the immensely growing number of professional positions in the highly developed capitalist industrialised countries. Hansjürgen Daheim mentions that in 1939 27.744 professional positions were counted in the USA and that lately this number has even increased to approximately 40,000.[10] A similar development is shown for West Germany. Daheim and other sociologists characterise this process as "an increase of professionalisation in the social division of labour" which is at the same time bound up with "an increasing professionalisation of occupational positions". The increasing professionalisation of the social division of labour, i. e. the fact that in order to carry out a certain task required by society knowledge, capacity and ability, i. e. specific professional qualities must be gained to an ever increasing degree in a definite training process, is without doubt a process which is linked with the development of modern divisions of labour and the formation of work processes in all fields of economics and activity. To all appearance in capitalist society a splitting up of professional positions is predominant in innumerable fields of activity whereby the internal unity and special quality of a profession is further gnawed away and the "professional position" appears basically as nothing but a certain "job". It

[9] Erb, D., Berufsbildungsforschung — Hilfe für morgen oder nur Schlagwort? in: «Die Welt», No. 121 of 28/5/1970, p. 17.

[10] Daheim, H., Soziologie der Berufe, in: Handbuch der empirischen Sozialforschung, Enke, Stuttgart, 1969, Volume II S., p. 358 ff.

is well known that a series of western sociologists have referred repeatedly to this trend of the devoiding of the professional concept observable in capitalist society and the transformation of "professional work into a commercial job" (Th. Scharmann, H. Klages, H. Schelsky et al.). H. Schelsky, to take one example, quotes it as being depressing to know that the profession has become a "job", a comparatively indifferent instrument serving as the basis of the consumer society.[11] This manifestation expresses nothing more than one specific side of the general alienation situation of the working man in capitalist society.

Hansjürgen Daheim is in no way able to explain away this eminently observable process when maintaining in his criticism of Dunkmann and Scharmann that the thesis of profession as job and its devaluation is a "romanticised" throwback to the preindustrial world especially of the artisan.[12]

In whatever way one cares to term this manifestation, the stark differences clearly emerge in the social character and in the function of profession in capitalist society, on the one hand, and in socialist society, on the other. This difference is finally determined by the qualitative social economic divergences of both types of social system. The character of the social system in question determines and penetrates all aspects of the relationships of men and profession, the content of professional work, structure of profession and its development trends etc. It is only from this point of view that the two basic trends described by Hansjürgen Daheim of the "professionalisation of differentiation based on labour division" and the "professionalisation of occupational positions" can be judged and assessed for their social quality. As far as Hansjürgen Daheim is concerned the number of professions quoted in profession statistics counts as an "index for the extent of professionalisation of differentiation, based on labour division"[13]. But this is a purely formal outward appearance. It does not in any way change the inner social quality of the profession or of professional positions. Even Daheim can only see professional positions in the capitalist industrial countries from the point of view of "execution of rôle". Supported by the "rôle" theory widespread in contemporary bourgeois sociology he confirms indirectly the alienation from profession resulting from social economics which is merely an expression of general alienation in an antagonistic class society stemming from private ownership of means of production. The concept of the "social rôle" under the conditions of the state monopoly ruling system reflects the objectively existent conflict between individual and society.[14] The "professionalisation of the differentiation on the basis of labour division" manifests itself in the capitalist society as a result of the process of a continued development of a system of "social rôles" in the concrete form of professional positions in which the individual is compelled (especially the worker) to fit into a social reality and social interests alien to him. In this case the occupation thus remains an extraneous and as far as the individual is concerned indifferent phenomenon, the concept of "job" dominates and all the values for personality forming

[11] Cf.: Dahrendorf, Industrie- und Betriebssoziologie, Berlin-West, 1965, p. 118.

[12] Cf.: Daheim, Soziologie der Berufe, loc. cit., p. 367/368.

[13] Daheim, H., Der Beruf in der modernen Gesellschaft, Berlin und Köln, 1967, p. 29.

[14] On the criticism of Marxist-Leninist sociology of the concept of the «social rôle» we draw attention to: Wörterbuch der marxistisch-leninistischen Soziologie, loc. cit., p. 388/393.

are compelled to retire in favour of the security of elementary material livelihood only possible by virtue of the compelled "execution of rôle".

Even the "professionalisation of occupational positions" when tested for social content becomes manifest as a process determined by the social economic and class system of capitalism. It is for instance just this occupation allocation or choice of so-called "professionalised occupational positions" characterised by amongst other things a high degree of systematised knowledge, formalised training methods etc., which is decidedly dependent upon objective social conditions and the subjective requirements of the individual. With respect to these two points Hansjürgen Daheim confirms that in capitalist society factors continue to have effect now as ever which regulate access to the various professional positions in the interests of the maintenance and consolidation of the existing autocratic and class system. This especially concerns the rôle of the school as "an educational institution designed for different social classes" (Daheim), knowledge of the system of occupations, social origin and material situation, poor vocational guidance, certain deliberately ingrained social prejudices etc.[15] Even as far as the allocation of professional positions, training and development on the lines of this basic character of class system the capitalist society is simply unable to realise any equal opportunity. A "free choice of occupation" becomes an illusion through this.

In the socialist system all fundamental provision is made for permitting the seeking of a profession, making a choice of profession and for the development of people to become a process of the realisation of the harmony of personal interests with those of the whole of society. The unified socialist education system guarantees principally access to all occupations and professional positions thus representing the most important objective conditions of a free choice of profession. A new quality of vocational guidance which on the 15/4/1970 was given legal status in the form of "Regulations on Vocational Guidance" was passed by the Council of Ministers of the GDR. It is based on the fundamental concept that the seeking of a profession is an "active process of the unfolding personality"[16] and all social organs of education, i. e. school, work, home and youth organisations etc. have a high degree of responsibility for young people seeking professions. The socialist society has an interest in a free and conscious choice of professions for young people and methodically promotes conditions which ensure this.

Sociological investigations contribute to the more profound concrete recognition of this complicated social process and with their results support the direct guidance and forward planning of the development of the system of professions and its content.

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[15] Thus H. Daheim comes to the conclusion that e. g.: «Today as 50 years ago the workers and the peasants *prefer* (my underlining, G. B.) the primary school for their sons. . .» «The trend that the primary school is no more primarily the school of the workers and the higher grade schools not so markedly the schools of the bourgeois is but scarcely recognisable.»

We take leave to quote the following statement which illustrates the stunning helplessness of bourgeois sociological research to recognise objectively necessary social changes and to formulate democratic alternatives for existing conditions: «An extensive eradication of class orientated recruiting can only be carried out when the lower classes become achievement orientated through their family experience and in work more strongly ensconced in the general framework and realise that school is the first step for professional training and succes in their career.» (Daheim, H. Der Beruf in der modernen Gesellschaft. Loc. cit., p. 82, 84.)

[16] Cf.: Kuhrt, W., Die Verantwortung der Gesellschaft für die Berufsfindung der Jugendlichen, loc. cit., p. 732.

CROSS-CULTURAL GENERALIZATIONS ABOUT THE RELATIVE SUCCESS OF AGRICULTURAL CHANGE PROGRAMS IN PEASANT VILLAGES: RESEARCH IN BRAZIL, NIGERIA, AND INDIA*

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USA

INTRODUCTION

Purpose of the present essay is to report results from the three-nation Diffusion Project, which tested propositions about the diffusion of innovations in peasant villages. Research on diffusion began in the late 1930's in the United States; by 1961 over 300 investigations had been published on the topic. Few of these inquiries, however, were conducted in less developed nations until Rahim's (1961) work in Pakistan, and the Deutschmann and Fals-Borda (1962) study in Colombia. Today, 1,800 diffusion publications have appeared,[2] and in the late 1960's there were approximately equal numbers of diffusion studies completed in less developed nations and in more developed countries.

The typical diffusion study in a less developed nation, however, was (1) only conducted with a small sample of respondents in a single village, and (2) rather narrowly concerned with concepts, designs, and research methods borrowed directly from U. S. and European diffusion research. We planned the Diffusion Project (1) to provide an empirical basis for generalization of the results by gathering data from large samples of peasants and villages, and (2) to attempt a crosscultural test of propositions about diffusion.

Generally lacking in past diffusion research are inquiries about how change programs succeed or fail in *villages*. Yet the village is most often the basic unit of work for change agencies in less developed countries. Further, it is the most impor-

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[2] The findings of these diffusion studies are synthesized by Rogers with Shoemaker (1971).

tant reference group for most peasants' decisions about adopting new ideas. If programs of change are to be successful among peasants, the village simply cannot be ignored.

Planners and administrators of national programs of change want to know what villages to select as targets for their programs, and what diffusion strategies their change agents should use. How important in explaining success or failure of change programs are such factors as the village's social structure, the level of modernization of the village (and its leaders), and the strategies of change utilized by change agents? These queries can be answered only with data from a *number* of villages that are representative of a less developed nation, or of a region within it.

THE DIFFUSION PROJECT

The Diffusion Project was designed to investigate the process by which agricultural, health, and family planning innovations diffuse to peasant farmers in less developed nations. The Project was sponsored mainly by the U. S. Agency for International Development, and conducted by the Department of Communication at Michigan State University. There were three sequential stages in the Project: (1) Phase I, designed to determine the variables related to the relative success of village programs of agricultural change, (2) Phase II, planned to identify the characteristics of peasant farmers who are innovators and opinion leaders in the diffusion of innovations, and (3) Phase III, a series of field experiments designed to test prototypic communication strategies (like radio forums) in diffusing innovations. The present paper deals only with our Phase I results.

About 1,000 village leaders and change agents were personally interviewed in about 80 villages in each of the three nations in Phase I. Nearly 1,000 peasant farmers in about 20 villages were interviewed in each country in Phase II. The Phase III data come from interviews with the Phase II respondents after a communication treatment had been introduced. Our total data base for the Diffusion Project consists of personal interview data from about 10,000 change agents, village leaders, and peasants.

Within each country of study, a particular state or region was selected as the site for the Diffusion Project, as the tremendous social-cultural variability, as well as logistical considerations, precluded drawing a sample of respondents from the entire nation. In Brazil, the Project was conducted in the state of Minas Gerais; in Nigeria our study was done in the Eastern Region; and in India we concentrated our research in three states: Andra Pradesh, Maharashtra, and West Bengal.

THE PHASE I UNIT OF ANALYSIS

Defining and selecting village units for inclusion in the Phase I study of the Diffusion Project turned out to be a particulary knotty problem. We selected villages only from among those in which planned programs of change were underway. In order to maximize the variation in relative success of these programs across villages (so as to insure representation of villages with both high and low adoption of new ideas), experienced agricultural change agents[3] were asked to nominate a

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[3] We selected only agricultural change agents who had spent at least six months working in the villages of study in Nigeria and in India, and with at least three years' experience in Brazil.

pair of villages from those in which they worked. One member of each village pair was judged by the change agent as a particularly successful locale for him in its adoption of agrucultural innovations, whereas the other village represented relatively little success in the introduction of the same new agricultural ideas.[4] We studied 76 Brazilian villages, in Nigeria, 71, and in India, 108.

We had trouble in defining our unit of study (1) so that it was perceived by its residents as their village, and (2) so that it was comparable with the village unit as defined in another country. This difficulty was most serious in Brazil and Nigeria.

Different means of selecting village leaders in each country were utilized to allow for cross-national differences in what constituted a village. In Brazil, formal leaders (school teachers, businessmen, etc.) were selected first at the *municipio* level. These formal leaders, in turn, sociometrically nominated other (informal) leaders, who resided in the selected villages of study.[5] About 13 formal and informal leaders were interviewed per village. In Nigeria, interviewers initially selected a local school teacher who in turn identified a panel of six formal and two informal leaders in the village. Each of these eight individuals sociometrically nominated eight village leaders. Out of all the individuals thus identified, the ten leaders most frequently nominated by others were selected for interview. In India, five formal leaders were selected in each village, who sociometrically selected there informal leaders, yielding a total of eight interviewed leaders per village in India.

Thus, in each country our selection of leaders was based on the assumption: (1) that a small sample of formal leaders could be interrogated, so as to identify the most important informal leaders in the village,[6] (2) who were in the best position to provide the data we needed about the relative success of village programs of agricultural change. The alternative of interviewing all members of each village was precluded by cost and time considerations.

PHASE I CONCEPTS FOR STUDY

The Dependent Variable of Program Success

We wanted a standard measure of the success of programs of planned change. The most valid measure is the extent of adoption of new agricultural ideas (promoted by the change program) by villagers, as the purpose of the change agency is to obtain the adoption of innovations.[7] In order to facilitate the comparison of one village's success with another's the index should include a common set of agricultural innovations that had been introduced under similar conditions in all

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[4] In the remainder of this essay we refer to the two categories of systems as «success» and «failure» villages, for the convenience of shorthand notation, although emphasizing that their differences are relative rather than absolute.

[5] In Brazil 102 of the Phase I informal leaders were also interviewed as part of Phase II, where we gathered sociometric opinion leadership data from all farmers in 20 villages. Correlation between the two measures is .67. If we accept the Phase II measure as valid, this is some evidence for the accuracy of our Phase I method of locating village leaders.

[6] This ability to identify accurately the informal leaders in a village was facilitated by the relatively small size of the systems, which typically contained about 100 farm families.

[7] An alternative measure of program success might be the degree to which desirable conse quences of the innovations have occurred, like higher incomes, levels of living, etc.

villages. This approach was not possible, because the climatic conditions within the countries are so varied that different innovations were promoted by the agricultural change agencies in different villages. For instance, in Brazil ACAR introduced dairy innovations in one village, but not in another where there were few dairy farms.

In each country we used a somewhat different measure of program success in the village. In Brazil, the dependent variable consisted of an index measuring the degree of adoption of six innovations by the village leaders (usually about 10 per village) who were interviewed in Phase I.[8] Three innovations were the same in each village of study: The planting of grass plots for cattle, the cultivation of vegetable gardens, and the adoption of hybrid corn. Three additional innovations were selected by the change agent for each village and were included in the index for that village. Thus our six-item scale in Brazil allowed a certain degree of standardization across villages, but also some degree of local adaptation of the measure to the local conditions of each village.

In Eastern Nigeria, the dependent variable was the number of 14 possible agricultural innovations adopted by at least one village member. The 14 innovations included improved varieties of corn and rice seed, communal plan and rubber plantations, fertilizer, insecticides, and improved chicken management.

In India, the dependent variable in Phase I was measured by an index composed of the degree of adoption of green manure, new agricultural implements, compost pits, artificial insemination for cattle, and improved seed varieties. The same innovations were included in the index in each of the 104 villages of study.

The Independent Variables

The Diffusion Project is unique in-so-far as it included a sufficiently large sample of villages in each country to allow for statistical analyses using the village as a unit of analysis. However, its very uniqueness is itself responsible for producing a special problem: There was not a great deal of useful past research of a similar type to guide us in selecting the independent variables.

Eleven core variables were identified for study in the planning of Phase I, which we categorized in three groupings: (1) village variables, (2) leader variables, and (3) change agency variables. We expected that the relative success of agricultural programs rested on the nature of the village, of its leaders, and on the change agent's strategies.

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[8] This type of index was selected from a variety of objective and subjective measures of village success because it correlated most highly, in 20 of the Phase I villages that were also in Phase II, with an adoption of innovation index for all villagers. We found that ACAR supervisors (the local change agents) were unable to make accurate estimates of the percentage of farmers in their villages that had adopted various innovations. The majority of change agents badly over- or underestimated the level of adoption for an innovation.

VILLAGE VARIABLES IN PROGRAM SUCCESS

The strongest correlates of program success in India are indicators of the *socio-economic development* of the village. These variables indicate the relative wealth of individual villagers, and the general level of development of the village.

The presence of such institutions as a youth club, co-operative, school, and a retail market in the village indicates the level of *institutional development* of the village. Presence of these places of entertainment, education, and business indicate a growing affluence and increasing sophistication of the village population. These social institutions also may directly facilitate the adoption of certain agricultural innovations. For instance, a co-operative may provide convenient supplies of such innovations as fertilizers and new crop seeds for local farmers to purchase.

System openness is defined as the degree to which a village exchanges information with the outside world. This conceptual variable is indicated by the presence of hard-surface roads, a post office, bus station, library, and movie theater in India. Obviously, such communication channels to the external environment facilitate the in-flow of new farming ideas.

In Nigeria, as in India, socio-economic development, institutional development, and system openness prevailed as the most important predictors of the success of programs of planned change. Specific indicants of these three core variables were combined into total indexes in Nigeria.

Communication integration is the degree to which the units in a system are interconnected via interpersonal communication channels. In a system with a high degree of integration, there are few cliques or isolates, and we expect the rapid diffusion of an innovation.

Data to test this expectation comes from Brazil, where we found that the success of the change program is positively related to communication integration [9] (Guimarães, 1968, p. 49).

New ideas usually enter via the higher status and more innovative members of a system. In an homophilous system, where elite individuals interact mainly with each other, there is little "trickle down" of the innovations to the non-elites. More traditional systems are characterized by a greater degree of homophily in interpersonal diffusion, while modern villages are more heterophilous.[10] As a system becomes more modern (that is, where the success of agricultural programs is greater), the nature of dyadic communication relationships becomes heterophilous.

In Brazil, none of the village variables that we studied proved to be significantly related to program success in the village (as measured by the adoption of agricultural innovations). The "villages" that we studied in Brazil depended heavily upon the *municipio* seat for commercial, social, and communication services of an institutional nature. So our rather arbitrary definition of "village" in Brazil

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[9] Our measure of communication integration is derived from a computer matrix multiplication (squaring, cubing, etc.) a who-to-whom matrix based on sociometrically-determined interpersonal diffusion patterns within the village.

[10] Evidence to support this notion comes from Rogers with Svenning (1969) in Colombia, Yadav (1967) and Shankariah (1970) in India, and van den Ban (1963) in the Netherlands.

is perhaps one reason why "village" variables are not related to program success. Village development seems to be more a function of the *municipio* (county) as a whole, rather than of the arbitrarily-defined villages that we delineated in Brazil.

What generalizations can be made from the analysis of village correlates of program success in India and Nigeria? *The degree of village socio-economic development is positively related to the success of village programs of agricultural change.*

A second generalization is that: *The degree of village institutional development is positively related to the success of village programs of agricultural change.*[11]

A third generalization inferred from the Phase I study is that: *The degree of system openness is positively related to the success of village programs of agricultural change.* System openness reflects village cosmopoliteness, the degree to which the village as a whole is oriented to external sources of modernizing influence, as opposed to being isolated from such sources.

Lastly, we conclude that: *The degree of communication integration is positively related to the success of village programs of agricultural change.*[12]

LEADER VARIABLES IN PROGRAM SUCCESS

Leadership is defined as the ability to influence other people's behavior in a desired way. What is the influence of village leadership variables on program success?

Leaders' Modernization

Cosmopoliteness is the degree to which individuals are oriented outside of their social system. We indexed cosmopoliteness as the number of trips to cities. The findings show that: *The degree of leaders' cosmopoliteness is positively related to the success of village programs of agricultural change.*

A leader does not need to leave his village in order to have contact with urban sources of modernizing ideas; he can listen to the radio, read newspapers, or watch a film, and thus be exposed to new ideas. *The degree of mass media exposure is positively related to the success of village programs of agricultural change.*

Literacy is the degree to which an individual possesses mastery over symbols in their written form, the ability to read and write (Rogers with Svenning, 1969, p. 72). In each country we measured the functional literacy of village leaders as their ability to read a sample of written material (such as a section taken from a newspaper). We found that: *The degree of leaders' functional literacy is positively related to the success of village programs of agricultural change.*

The level of living of village leaders and the size of their farm operations are indicators of their socio-economic status. In Brazil, the average amount of land

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[11] We found modest correlations between village population size and program success: .12 in Brazil, .20 in Nigeria, and .25 in India. Perhaps there is a slight tendency for larger-sized villages to have a greater degree of institutional development (in that the larger population would support more village institutions), which we know to be correlated with program success.

[12] While the previous three generalizations are supported by evidence from Nigeria and India, but not from Brazil, the present generalization is only supported by our analysis of the Brazil data, although we have no reason to expect it would not also be evidenced in the case of Nigeria and India, had the rather complex matrix multiplication procedures also been completed with those data.

cultivated by each leader was taken to indicate his status; in India and Nigeria, we determined the average number of farm laborers employed by each village leader. A measure of level of living was obtained for each leader, consisting of the possesion of such items as a radio, table and chairs, clocks, etc. In Brazil, level of living did not correlate significantly with program success, but generally: *The degree of leaders' farm size and level of living is positively related to the success of village programs of agricultural change.*

We generally conclude from the present data that: *The degree of leaders' modernization is positively related to the success of village programs of agricultural change.*

Leaders' Consensus

Consensus is the degree to which individuals in a social system are in agreement about problems or issues that are salient to the system. We asked our Phase I respondents what problems they felt were most important in their village. Then we computed, for each village, the extent to which each respondent (leader) agreed with every other leader in his village. We expected that in villages where concerted effort on mutually recognized problems was facilitated by consensus, change programs would be relatively more successful. *The degree of leaders' consensus about village problems is positively related to the success of village programs of agricultural change.*

Opinion Leadership Concentration

Concentration of opinion leadership is the degree to which opinion leadership is confined to a few, rather than distributed among many, members of the social system. We measured opinion leadership with sociometric questions like "From whom in this village do you obtain information and advice about new ideas in farming?" In some villages we found that only a handful of individuals possessed most of the opinion leadership; it was very concentrated. In other villages, opinion leadership was a more widely-shared commodity.[13] We expected that programs of agricultural change would be more successful in villages where opinion leadership was more concentrated, as the change agent would only need to contact a very small number of opinion leaders directly in order to reach all of the followers indirectly. We found: *There is no evidence of a consistent relationship between opinion leadership concentration and the success of village programs of agricultural change.*

Socio-Economic Status Concentration

The concentration of socio-economic status was defined and indexed in a similar way to opinion leadership concentration. Where status is more concentrated, the efforts of the change agent should be more effective, because his job is

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[13] Our measure of opinion leadership concentration in a village was the Gini index, a standard indicator of the degree to which a variable's distribution in a system is concentrated in a few hands. The Gini index is 1.0 when each member of a system possesses an equal amount of the variable (like opinion leadership); the index is 0.0 when one individual possesses all of the variable and all other members have none of it.

relatively easier. *There is no evidence of a consistent relationship between socio-economic status concentration and the success of village programs of agricultural change.*[14]

CHANGE AGENT VARIABLES IN PROGRAM SUCCESS

Change Agent Contact with Clients

We found strong support for the generalization that: *The degree of change agent contact with clients is positively related to the success of village programs of agricultural change.* This relationship holds for change agent contact, whether it is reported (1) by the change agent (as the number of times per year that he contacts clients in a village), or (2) by the village leaders. The contact-success relationship is quite strong in less developed nations, perhaps because alternative diffusion channels (like mass media or commercial salesmen) are not so widely available as in more developed nations.

Change Agent Characteristics

We investigated whether such variables as the change agent's age, formal education, technical training, marital status, etc. were related to program success. We conclude that: *There is no evidence of a consistent relationship between change agent characteristics and the success of village programs of agricultural change.*

Change Agent Communication Approach

Does *how* a change agent approach his clients affect his success, as well as *how much* he contacts them? Our data suggest that the answer is "yes", but our evidence is rather weak. For instance, in Nigeria we found a correlation of .53 between the number of different communication channels used by a change agent, and program success. This result is support for the use of a "multimedia approach" in diffusing innovations to clients; the advantage of this strategy is to appeal to several of the clients' senses at once.

Perhaps the quality of the change agent's contacts with his clients is important to program success, as well as the quantity of contacts. We found in India that the VLW's competency (as rated by his agency superiors and by village leaders) is correlated .39 with program success.

We conclude that: *The change agent's communication approach in diffusing innovations to his clients is positively related to the success of village programs of agricultural change.* Evidence for this generalization is less than adequate, and it should be subjected to further research.

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[14] We felt that perhaps these inconsistent results might be due to another variable that intervened in the status concentration-program success relationship: The degree of modernization of these individuals of high status. If status were concentrated in the hands of a few villagers, and if they were literate, innovative, and cosmopolite, perhaps program success would be facilitated. We tested the concentration-modernization-success hypothesis in Brazil. It was not supported.

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GOALS, ORGANIZATION AND STRATEGIES
OF CHANGE AGENCIES

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Introduction

For many years organizational theorists have given their attention mainly to
 study factories. More recently consider able attention has also been given to
er organizations such as hospitals, research institutes and government bureau-
cies. Until yet, however, not much attention has been given to change agen-
s. This is a pity, because there is a rather general feeling, that many change
ncies are not organized as efficient as they could be. The objective of this paper
 o apply organizational theory to some of the problems of change agencies. This
ght be of some help for the solution of these problems, but more importantly
vill draw our attention to problems which need more research.

When we speak of a change agency we speak of an organization which has as
najor goal to help their clients to change their behavior. This definition im-
es that the intention is to further the interests of the clients. In some situations
 clients decide what their interests are, in other situations the change agents
 this for them or is this a joint effort of clients and agents. This last kind of
ations have the danger that the interests of the change agents themselves or the
up which employs them have too much influence in decisions on the kind of
nge one tries to achieve.

Goals and strategies

It is generally accepted that the optimal structure of an organization and its
lership pattern should depend on its technology, the kind of production processes
formed in the organization and the environment in which it is working, espe-
ly the culture of the people (Thompson, 1967, Ch. 5).

When the technology is changing, the organizational structure and the leader-
 pattern should also change. However, it seems to be no exception that this latter

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eningen, the Netherlands. A more elaborte version of this paper is available from the first
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kind of changes is lagging behind. This lag might be one of the major reasons for the organizational problems change agencies face at present.

In the developed countries the *goal* of change agencies has been for a long time to introduce rather simple change in the production process, such as the optimal use of fertilizers for agricultural extension services or simplified routing in the scientific management of industrial production processes. At present the goal is much more to develop people, such as the management training given by agricultural extension services or leadership training in industry and government agencies.

This change in goals has resulted in a change in the *strategies* used.[2] Previously the change agent could give a rather directive advise by saying: "If you do this your efficiency will increase." Nowadays change agents are increasingly using a non-directive approach in which they help their clients to decide themselves how they can achieve their own goals better (Batten, 1969).

In some of the former colonial countries a number of the top officials of the change agencies have been working previously in the colonial administration, where the goal was to maintain law and order. Now the goals have been changed, but the organizational tradition which was fitted to maintain law and order is still influencing change agencies with a quite different goal (Taylor c. s., 1965). One is beginning to realize that the major resource these countries have is their own people, and therefore, that development of the people should be an important objective of government policy. However, it is sometimes doubtful whether the change agencies, which should realize an important part of this objective, are organized in such a way that they can give the greatest contribution to the development of their clients. Perhaps too often orders are given to them, rather than help to develop their decision-making ability.

Conditions for the organization of change agencies

The technology of a change agency is quite different from the technology of a factory or a revenue office. Therefore, also its organization should be different. We will first discuss some conditions which seem to hold for the organization of all change agencies and afterwards some additional conditions which are of special importance for change agencies employing a non-directive strategy.

A major task of a change agency is communication, both from the research institutes to the clients and from the clients to the research institutes and policy making bodies. Communication with the clients requires an efficient system of internal communication in the agency. This is not only communication from the director to the field workers, but also communication from the subject matter specialists to the field workers and between these specialists, and in the other direction from the field workers to the staff. In order to be able to solve the problems of the clients one should be able to use the information of all staff members. The field workers are usually best informed about the clients, the subject matter specialists on the latest research findings in their speciality and the director on government policies effecting the clients. These people should cooperate as a team in

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[2] A classification of different goals and strategies is given in the more elaborate version of this paper.

which everybody feels free to present his information at the moment he thinks this is useful for their problem solving process. Also such a group of extension officers can help each other to discover the best solutions for the problems they face in their work.

The change agency and the change agents have to change themselves continuously in order to remain leaders in the change process.

Frequent personal contacts between the change agents and their clients are essential for obtaining change in behavior (Rogers, Ashcroft and Röling, 1970). This implies that the change agent will have to work hard, frequently without much supervision. Therefore, he has to be highly motivated to work hard. Also in order to be able to convince his clients, he should be convinced himself that he does a useful job.

The change agent should work long enough in the same area to get to know the people and their situation, to gain their confidence and to be interested in programs which can only have an impact in the long run as is usually the case with the development of people. We would prefer a period of around 10 years.

Nearly always a change agency will have to cooperate with other agencies to achieve its goals. Unfortunately rivalries between government agencies are quite common both in developed and in developing countries. Frequently these rivalries have a harmful effect on the achievement of the goals of the change agency. Therefore the agency should be organized in such a way that its staff is willing to make sacrifices in order to achieve a smooth cooperation with other agencies.

A non-directive strategy cannot be used if the field workers get orders to achieve certain targets, but only if they have the freedom to work on the felt needs of their clients. This makes it much more difficult for subject matter specialists and other staff members to serve the field workers efficiently. If one gives the field workers orders, one can order all of them to tackle the same problem and provide them with the assistance needed to solve this problem. Field workers, who work on the most urgent problem of their clients, might select different problems as being most urgent in their area and therefore ask for different kinds of help from the staff of their agency.

The difficulty to solve this organizational problem is probably one of the reasons why advisory boards from the clients have frequently only a marginal influence on the program of the change agency. It is reported for instance from the U. S. A., a country with a long tradition in democracy, that: "It (the local co-opted association or committee) cannot become an effective part of the major policy determining structure of the (TVA) agency. In practice only a limited sphere of decision is permitted, involving some adaptation of general directives to local conditions" (Selznick, 1966, p. 221).

Structure of the organization and pattern of leadership

The previous discussion makes clear that for a change agency an organizational structure has to be found which stimulates an efficient communication within the organization, a good communication and co-operation with other government agencies and a high level of motivation of the staff. How this can be achieved has recently been studied by a number of social psychologists and sociologists (e. g. Argyris, 1962, Bennis, 1966, Likert, 1961 and 1967, Taub, 1969).

Their conclusion is that the Weberian bureaucracy (Weber, 1965, pp. 125-130) is harmful for these goals. This is especially the case with the "clearly defined hierarchy of offices". In a modern organization we need a cooperation between different specialists each of whom is more competent in his own field as one of the others. When they have the feeling that they got a fair share in the decision making they will be moɾe motivated to execute these decisions. The traditional hierarchy frequently causes a fear for the boss, which prevents the free communication of essential information to him. The impersonal relationships between officers make it difficult to communicate emotions and feelings which are essential both for sound decision making and for motivation. The "clearly defined sphere of competence" of each office and the rules according to which the office is executed prevent the essential flexibility in a rapidly changing society. It creates the danger that the officers try to further the interests of their own department rather than seeing what their department can do in the interests of the organization as a whole.

In a modern organization there is a tendency towards a participative pattern of leadership, which stimulates by an open communication that the staff agrees about the goals of the organization and are motivated to try to achieve these goals. It also shows the confidence of the superiors in the ability of their subordinates to achieve these goals. When the subordinate faces difficulties he can expect help rather than to have to fear for punishment. Most of the decisions will be taken by a group of a superior with his subordinates. The superior can act as a linking pin with other groups at a higher level in the organization. The members of such a group will feel responsible not only for their own work, but for the work of the group as a whole. Likert claims that this participative pattern of leadership makes it possible to utilize the information of all groups and persons in the organization effectively.[3] In such a modern organization the traditional distinction between superior and subordinate is diminishing. It is not yet quite clear how far this can go.

One study has analysed the effects of different communication patterns on the coordination among different staff members of a change agency and on their initiative (Pelz, 1966). A combination of meetings and personal contacts between staff members achieved a favorable score on both points, written communication+ meetings was favorable for the coordination but very unfavorable for the initiative, whereas written+personal communication was unfavorable for the coordination and had no outspoken effects on the initiative of the staff.

The staff itself was convinced that they used written communication too much and personal contacts not enough to get things done. As the major factors blocking the development of more initiative one saw: excessive rules and red tape, insufficient delegation of authority and lack of recognition of merit. Lack of funds or supplies was of much less importance.

Not in all change agencies one gets the impression that the new ideas about participative leadership are applied or even can be applied. Some change agencies have a highly authoritarian structure. In one study 100% of the Block Development Officers, the superiors of the field staff, agreed with the statement: "With-

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[3] The application of these kinds of theories to the situation in the U. S. Extension Service is discussed in a special issue of the Journal of Cooperative Extension, V (Spring, 1967).

out frequent and detailed inspection of his work, one cannot expect that a VLW (field officer) will do his work properly", whereas 56% of these VLW's agreed with the statement "If a VLW is quite active, he can easily get in trouble, but if he is friendly and obedient to higher authority without taking any initiative, he will not have any difficulty" (Van den Ban and Thorat, 1968). One reason might be that the superiors are not aware of the social psychological research on management and therefore continue to work in the old authoritarian way. It is also possible that they are aware of these ideas, but that they have not been trained to use them properly. There are also other possibilities as we will see in the next section.

Cultural factors in the effect of different leadership patterns

In developing countries the leadership pattern in change agencies is often rather authoritarian as we found in the last paragraph and the decision making is highly centralized (UN, 1961, p. 7). It may be that the participative pattern of leadership, which according to several studies works well in developed countries is not the best for their cultural situation. The modern patterns of management require a lot of initiative of all staff members of a change agency. In a rapidly changing society this initiative has to be taken under very uncertain conditions. In a society where one is used to be punished for failures but not often to be rewarded for accomplishments this is unpleasant.

An example of these cultural factors gives India. Many intellectuals read regularly the Ramayana, one of the holy books, for guidance in their life. A main theme in this book is that a son does well to fulfil the requests of his father, even if he knows quite well that his father was compelled to make his request, but did not desire to do so. In such a tradition it is understandable that one is not trained to take the initiative modern management requires of subordinates in Western society.

Perhaps this is the explanation for one of the findings of Van den Ban and Thorat (1968). They found very authoritarian relations among the staff of the C. D. organization in India. Probably as a result of these relations the attitudes of the C. D. staff towards the cultivators were also rather authoritarian. Also the C. D. staff took initiative only infrequently. At the same time most village leaders consider the C. D. staff as helpful or very helpful to them. This is a bit more true in villages with an authoritarian BDO than in villages with a democratic BDO. In these last kinds of villages the VLW's were, according to the village leaders, willing to listen to the cultivators less than in villages with an authoritarian BDO.

There are explanations possible, but it seems that a sudden change to a modern participative pattern of leadership in a change agency in this cultural situation has no favorable effects. In the long run when people are used to this pattern of leadership and have confidence that it will be used consistently, the situation might be different. However, without an empirical test this is not more than a hypothesis. In many developing countries the staff of the change agency is transferred every two or four years, that is just at the time they begin to become productive in stimulating change in the area. One is afraid that close ties between the staff of the change agency and some people in their area will promote favoratism. In some cases this fear may be justified for the provision of means and services, but

for giving advice or non-directive help these frequent transfers are frequently detrimental.

The background of this need for frequent transfers can partly be sought in the patronage system which exists in many developing countries. Often the people expect that their patron will help them with the resources he has, or as broker to mediate with government officials and other influential people. In return these clients will support their patron in elections or with unpaid labor (Lele, 1966, Sociologische Gids, 1969). The clients try to give the staff of the change agency the role they know for a high status person. That is the role of a patron. Therefore they expect this help from their agent, rather than advice how they can solve their own problems themselves. The senior author asked e. g. in an Indian village what would happen if the VLW remained in the same circle of villagers for 10 years. The answer was prompt: "He would report that he had given a lecture in village A yesterday and the sarpanch (head) of the village would confirm this, whereas in fact he stayed at home. The sarpanch can expect in return a preference in the distribution of fertilizers or seeds." This villager expected that his VLW would only work if he is forced to and that he would use a kind of patron-client relationship to avoid this force. If the change agent accepts the role of a patron, which his clients expect him to take, this gives him an opportunity to influence them he would not have otherwise. However, it also had disadvantages such as the limitations on the development of independence among his clients. We are not aware of empirical research of this problem.

Studies of the Ministry of Rural Development in Malaya (Ness, 1967) and the Corn and Rice Production Coordinating Council on the Philippines (Arcega, 1969) give indications that also in such an authoritarian culture change agencies can be quite effective in promoting an increase in production, but only under certain conditions. These conditions seem to be:

1. An interest in output goals, rather than in moving files,[4] and therefore the ability to make the necessary decisions without delay.

2. Clarity about the goals which have to be achieved.

3. Frequent inspection of the actual work in the field by the top leaders themselves.

4. A confidence of the staff that decisions are not taken arbitrarily, but that they will be rewarded if they do all they can to achieve the goals of the program and punished for their negligence or lack of industry.

5. The political power to coordinate the work of different Ministries and agencies.

It is not yet sure how effective these change agencies have been in developing the decision making ability of their clients. An increase in production is much easier to measure.

Another factor which seems to limit the effectiveness of some change agencies is the combination of the role of the change agent with that of the salesman, distributor of government grants, data collector for the bureau of census or even policeman. On this problem again there is very little research, except a study of Kalshoven (1969), who asked peasants what their image was of the change agents in Suriname. He found that they were seen less frequently as extension officers

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[4] A valuable analysis of a bureaucracy where there is a lot of interest in moving files according to all rules of the bureaucracy, and perhaps therefore not much corruption, gives Taub (1969).

than as men who control the farmers, who supply them with seeds and fertilizers or who collect data for the census bureau. Indeed the change agents spend more time in collecting census data and in controlling farmers than in advising their clients. It is not only time what is involved, but confidence in the change agents is even more important. Most peasants do not believe that salesmen and police-men try to help them.

The difficulty is that in modernizing developing countries many new roles have to be fulfilled, whereas few capable people and not much money are avail-able. Therefore one tries to give one person many different roles, without always asking whether or not these roles are compatible. The role of a non-directive change agent and of the man who controls the distribution of irrigation water are certainly not compatible.

Need for research

With the increasing need for change in society the importance of the role of change agencies is increasing rather rapidly. At the same time there is a rather widespread feeling that many of these agencies are not working very effective. It is a pity, therefore, that research whether or not this feeling is correct and what factors are influencing the effectiveness of change agencies is quite scarce. It seems to us that future research in this field should give special attention to:

1. The short term and long term effects of different patterns of leadership in change agencies on the communication processes within the agencies and between the agents and their clients, on the motivation of the change agents to work hard for the interest of clients and on the coordination among the staff members of one agency and of this agency with other agencies, which work in related fields.

2. The role representatives of the clients can play in determining the program of the change agency, and the way in which a non-directive strategy, which has a favorable effect on the development of the clients, can be combined with an effi-cient organization of the resources of the change agency.

3. The influence of the culture on the effects of different leadership patterns.

4. The effects of a combination of change in the structure of a change agency and staff training in leadership and in participation in decision making on the ef-fectiveness of a change agency.

5. The effects of the combination of different tasks in one agency on role con-flicts for the change agent and on the coordination of different activities.

Conclusions

The optimal organization of a change agency probably depends on:

1. The goals the agency tries to achieve.

2. The strategies which are used to achieve these goals.

3. The environment in which the agency is working, especially the larger orga-nization of which the agency is a part and the culture of the society in which it is working.

4. The staff of the agency.

The difficulty is that each of these factors might require a different kind of struc-ture for the agency and a different pattern of leadership within the agency. To find the right balance between all these factors is not easy.

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ACCEPTANCE OF AN INNOVATION: THE CASE
OF PLANNED WEATHER MODIFICATION

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While man has been inadvertently altering the weather for centuries, at least on a micro-scale, it is only in recent decades that he has consciously attempted to alter the weather through the use of technology. Traditionally, in most societies it has been assumed that no one could alter the weather to any significant extent and, therefore, the issue of who has the right to modify the weather did not arise until recently. Both the concept of weather modification and the technology for doing so may be viewed as innovations which are now in the early states of diffusion.

This is a report on one aspect of research on acceptance of planned weather modification experiments conducted in three areas of the USA, New York, Montana and Utah. Weather modification efforts had not been carried out in those areas previously. Teams of university scientists had planned to begin experimental snow modification efforts in each area during the winter of 1968-1969. In the summer of 1968 the authors selected both experimental and control communities in each area and conducted extensive interviews with a random sample of adults in each community prior to any public announcement of the planned weather modification efforts. The same respondents were reinterviewed in mid-winter when the experiments were underway and again in the spring after the experiments had been concluded.

Included in the interviews were questions designed to elicit information regarding the respondents' views of: 1) scientific experiments in general, 2) weather modification experiments in general. 3) weather modification experimentation in the local area. information regarding 4) characteristics of respondent's nuclear family, 5) demographic characteristics of the respondent, 6) respondent's involvement with friendship groups and community organizations, 7) exposure to mass media, 8) use of broadcast and printed weather information, and data on numerous other variables thought to be potentially related to the respondents's acceptance or rejection of the innovation.

Concurrent with the interview phase of the project, studies of the communities' power structures were made. Initially using a reputational approach, persons who had been influential in prior community controversies were identified. Each of these "community influentials" was contacted and interviewed. Information about their views of the planned experiments and the possibility of any commu-

nity action in response to the experiments was elicited. Case histories of each area concentrating on any controversy that developed were maintained.

Periodic interviews with representatives of the experimental agencies were also obtained. Records of any changes in public information programs or actual experimental procedures were kept. All interaction between the agencies and any groups in the community was monitored. A special effort was made to contact all local interest groups which were potential protest or support organizations for the experiments and an attempt was made to keep close track of their reactions during the experimental period.

Monitoring of all mass media was undertaken so as to assess the effects of publicity on the fate of each experiment.

These several concurrent studies allowed the authors to get an overall picture of the progress of each cloud-seeding experiment and of the response of each community as a whole and of the individual residents to the innovation.

A THEORETICAL PERSPECTIVE

The general theoretical framework which is being developed from the synthesis of these efforts emphasizes a system approach. Diffusion of innovations takes place in given socio-cultural systems and a thorough understanding of the complex relationships between the "introducing agency", the "target communities" and the individual actors in each system is necessary in order to understand the pattern of responses which follows initial introduction of the innovation. General models of these relationships and the effects they have on diffusion are being developed.

This paper will concentrate on one aspect of these efforts. Several models have been proposed to explain variation in individual acceptance of innovations and changes in attitudes over time. The models that have best fitted these data are described herein.

Before elaborating on these models, however, we will turn first to a brief description of the innovation.

THE INNOVATION

At the present state of technological development, the immediate, direct consequences of snow and rainfall modification experiments are inherently ambiguous in the sense that it is impossible to ascertain in advance and even during the course of one season of planned modification effort whether any significant change in weather parameters will or has taken place. For most geographical areas where precipitation experiments might be contemplated the natural variation in precipitation over the months of a season and between seasons is so great that even "unusual" rain or snow events can not be linked readily with any modification effort. Thus, during the first few seasons of modification even a well-educated citizen living in a "target" area has no way of deciding whether the innovation being applied (cloud seeding to induce precipitation) is in fact effective or not. And even if he asks the scientists conducting the experiment he will probably be told that it will be several years before they can give him even a tentative answer. If he should take the time to carefully check the results of past experiments carried

out in other locations he will learn than in some instances precipitation was increased, in some precipitation was decreased, and in many the outcome was inconclusive.

Before the consequences of an applied innovation can be evaluated positively or negatively, the potential user must have some notion of what the consequences will be. For weather modification these consequences are almost always ambiguous.

There is a second unique element to this particular innovation. Since clouds move at various speeds and in different directions on different days it is seldom possible to conduct cloud seeding in such a way that only those persons desiring the effort will be effected. Persons actively sponsoring a modification effort may be said to be adopters of the innovation. Other persons living in the target area may know of the effort but may take no steps for or against the attempted modification. The most common response to this innovation is simply an oral statement of acceptance or rejection. It should be clear that for *this* innovation "acceptance" need not imply use or application as it usually does with the notion of adoption. For the weather modification experiments we studied a resident could not really be an adopter in the usual sense anymore than he could be an adopter of the satellites that pass overhead. He can, however, express acceptance or rejection of the plans to conduct the modification experiment and to continue it for another year. Here, then, acceptance connotes aquiescence and rejection connotes expressed disapporoval.[1]

Even though this innovation has an object component associated with it, for the citizen in the area the decision to accept or reject is essentially a symbolic one. In Roger's terms it is an individual-symbolic-optional decision[2].

These characteristics should be kept in mind when interpreting the following results.

FACTORS INFLUENCING INITIAL ACCEPTANCE

Several conceptual approaches and modes of analysis are being used in our effort to gain a better understanding of acceptance of this unusual innovation. One model being utilized was proposed by Suchman[3]. It uses the epidemiological triad of host, agent and environment to classify the factors that lead to acceptance.

Host factors, or individual tendencies, include recognition of seriousness of the problem being attacked, acceptance of personal vulnerability to the problem, predisposition to take action to solve it, motivation to act on the problem, abi-

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[1] This kind of distinction is precedented in the literature in the form of the familiar distinction between adoption and internalization. The peculiarity of the present case and other similar innovations is that adoption is not often a matter of individual choice and researchers interested in these cases will usually find themselves studying the process of internalization. See Elihu Katz et. al., Traditions of Research On The Diffusion of Innovations, American Sociological Review, 28:2 (April 1963), pp. 240-241.

[2] See E. M. Rogers and F. F. Shoemaker, Communication of Innovations: A Cross-Cultural Approach, forthcoming.

[3] Edward A. Suchman, Preventive Health Behavior: A Model for Research on Community Health Campaigns, Journal of Health and Social Behavior, 8:197-209, 1967.

lity to do something about it, knowledge of the proposed innovation and belief that the proposed action will work.

Environmental influences, or social control factors, consist of social pressure to act toward solving the problem, incorporation into role performance of the proposed action and the cultural and social acceptability of the innovation.

Agent, or situational, factors are its effectiveness, the pleasure of doing it, the effort it requires, the individual's previous experience with the agent, an environment favorable to its use, and its attractiveness.

In this study a factor is designated "positive" if the proportion of "acceptors" responding favorably to it was significantly larger than the proportion of "nonacceptors" so responding. According to the model, if more of these factors are positive than negative the innovation will be accepted by a majority of the respondent sample.

Findings

We found eight positive factors. They are recognition of seriousness, motivation to act, knowledge of the action, belief in proposed action, informal social pressure, incorporation into role performance, acceptability of the action and pleasure of the action. Five of the factors were not related to the acceptance of the innovation in the study. They are acceptance of vulnerablility, ability to act, effort of the action, previous experiences and attractiveness. Inadequate data preclude the assessment of the relationship for two factors: effectiveness of the action and favorable environment. The results on one factor, predisposition to action, are too ambiguous to draw a meaningful conclusion. Thus, firm conclusions can be reached for 13 factors; 8 being positive and 5 being negative or non-significant. Hence the data, taken as a whole, indicate that the model does predict successfully for the total sample, since the majority expressed acceptance of the weather modification experiment.

To examine further the usefulness of the model in predicting acceptance of the innovation, each respondent was assigned an acceptance score—one point for each of the factors for which he had a positive response, and zero for a negative response. The points were summed for each person with a possible range from zero to fourteen. If the model is correct, respondents with a score of 8 or above should accept the innovation and those with scores of less than 8 should reject it. The data support this hypothesis. Respondents with high scores were more apt to accept the innovation and the relationship was significant at the .001 level.

If the two factors for which we lack adequate data are treated as negative factors (every respondent assigned a score of zero for both) the individual's total score will not change, but the number of factors that constitute a majority changes from 8 to 9. When this is done, the relation between the assigned factor acceptance score and approval of the innovation continues to be significant at the .0001 level. Thus, the model permits prediction successfully for the group as a whole and for individual members.

CHANGE IN ACCEPTANCE-REJECTION OVERTIME

A second theoretical perspective was used to explain change in individual acceptance-rejection of the weather modification innovation over time. A modification of Festinger's theory of cognitive dissonance was developed. It is known that individuals experiencing cognitive dissonance will frequently change their opinions so as to minimize the resulting psychological discomfort and that they will change in predictable ways. It is also a sociological commonplace that membership in groups involves strong pressures to conform to interrelated patterns of behavior and attitudes. It is clear that in the development of individual opinion a person attempts to arrive at positions that minimize divergencies both between cognitive sets of ideas which he holds about relevant issues and also between his views and his understanding of how significant others feel about those issues. Thus both dissonance (intra-person) and congruence (inter-person) should be related to the process of opinion change.

Dissonance

In this study a person was designated "dissonant" when during the same interview he answered "yes" to one and "no" to the other in response to these two issues: 1) Is it all right for scientists to experiment with weather modification? (*area not specified*), and 2) Is it all right for scientists to experiment with weather modification *in this immediate locality*? If he answered "yes" to both or "no" to both he was labelled consonant. For each interview (before, during and after the experiment) each respondent was labelled dissonant or consonant.

Congruence

Our data indicate that there was variation across the three interview phases in the proportion of respondents indicating acceptance, rejection and uncertainty with respect to weather modification. However, the *majority* opinion was consi-

TABLE 1.   ACCEPTANCE OF WEATHER MODIFICATION
IN GENERAL VS TIME

	Interview Phase		
Acceptance	I	II	III
Accept	216(89%)	156(78%)	163(82%)
Reject	10 (4%)	21(10%)	15 (7%)
Uncertain	15 (6%)	21(10%)	19 (9%)

stently favorable toward weather modification area unspecified and toward weather modification in the immediate locality (Tables 1 and 2). A respondent is said

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to be "congruent" if he agrees with the majority view and "non-congruent" if he does not.

Thus, with respect to *each* issue (area not specified vs area is immediate locality) a respondent may be said to be in one of the four dissonance-congruence states. See Figure 1.

Relationship To Group Opinion	Relationship To Other Individual Opinions	
	Consonant	Dissonant
Congruent	Consonant-Congruent (1)	Dissonant-Congruent (3)
Non-congruent	Consonant-Non-congruent (2)	Dissonant-Non-congruent (4)

Figure 1
Dissonance-Congruence Typology

Now, if we assume that the amount of discomfort increases with the number of divergent factors and that the pressure for the reduction of discomfort increases as discomfort increases, predictions about the relative frequency of opinion change can be made. In state one there are no divergent factors. It is the most stable state

TABLE 2. ACCEPTANCE OF WEATHER MODIFICATION
LOCALLY VS TIME

	Interview Phase		
Acceptance	I	II	III
Accept	109(45%)	125(65%)	136(69%)
Reject	79(32%)	25(13%)	31(15%)
Uncertain	52(21%)	42(21%)	29(14%)

and least opinion change will occur for such persons. State four is clearly the leas stable; the most change is anticipated here. State two is probably more stable than state three but space limitations preclude a discussion in this paper of the complex issues involved.

FINDINGS

Respondents who were in highly unstable states initially, did change their pot sitions and tended to move into more stable states (Tables 3-9). Thirty-one of thirty-six respondents who changed between the first and second interviews moved to-

more stable states and thirteen of nineteen changed in the predicted way between the second and third interview. These trends are extremely strong and the principal hypothesis, i. e., persons will move from less stable to more stable states, is supported by these data. A separate analysis of the relation between publicity receiv-

TABLE 3. DISSONANCE/CONGRUENCE VS TIME

	Phase I	Phase II	Phase III
Consonant Congruent	105(60%)	115(82%)	127(81%)
Consonant Non-congruent	5 (2%)	14(10%)	19(12%)
Dissonant Congruent	0	3 (2%)	3 (1%)
Dissonant Non-congruent	63(36%)	8 (5%)	6 (3%)

$X^2 - 83.13$, $p < .001$ (Data were collapsed into a 3X3 table —CC, CN and DC, DN vs Time for chi-square computation.)

TABLE 4. DISSONANCE/CONGRUENCE PHASE I VS DISSONANCE/CONGRUENCE
PHASE II

	Phase II			
Phase I	Con/Con	Con/Non	Dis/Con	Dis/Non
Consonant Congruent	67	1	2	2
Consonant Non-congruent	0	3	0	0
Dissonant Congruent	0	0	0	0
Dissonant Non-congruent	26	5	0	4

$X^2 - 68.34$, $p < .001$ (Data were collapsed into a 2X2 table —CC, DN vs CC, other — for chi-square computation.)

ed about the weather modification experiment and opinion change indicates no demonstrable relationship. Thus, the dissonance-congruence process appears to be the most powerful explanation available.

TABLE 5. DISSONANCE/CONGRUENCE PHASE II VS DISSONANCE/CONGRUENCE PHASE III

	Phase III			
Phase II	Con/Con	Con/Non	Dis/Con	Dis/Non
Consonant Congruent	93	1	0	3
Consonant Non-congruent	2	6	1	1
Dissonant Congruent	1	1	0	0
Dissonant Non-congruent	2	6	1	1

X^2 — 43.84, $p < .001$ (Data were collapsed into a 2×2 table —CC, other vs CC, other — for chi-square computation.)

TABLE 6. ACCEPTANCE OF WEATHER MODIFICATION EXPERIMENT IN LOCAL COMMUNITY VS DISSONANCE/CONRUENCE VS TIME II

	Local Acceptance of Weather Modification	Phase I	Phase II
Consonant Congruent	No (change)	—	3 (4%)
	Yes	74	71(95%)
Consonant Non-congruent	Yes (change)	—	0
	No	4	4(100%)
Dissonant Non-congruent	Yes (change)	—	27(72%)
	No	37	10(27%)

X^2 — 64.09, $p < .001$ (Data were collapsed into a 2×2 table —CC, DN vs stable, change — for chi-square computation.)

TABLE 7. GENERAL ACCEPTANCE OF WEATHER MODIFICATION VS DISSONANCE/
CONGRUENCE VS TIME II

	General Acceptance of Weather Modification	Phase I	Phase II
Consonant Congruent	No (change)	—	3 (5%)
	Yes	53	50(94%)
Consonant Non-congruent	Yes (change)	—	0
	No	2	2(100%)
Dissonant Congruent	No (change)	—	8(28%)
	Yes	28	20(71%)

$X^2 - 5.31$, $p < .05$ (Data were collapsed into a 2×2 table —CC, DC vs stability, change — for chi-square computation.)

TABLE 8. ACCEPTANCE OF WEATHER MODIFICATION IN LOCAL COMMUNITY VS
DISSONANCE/CONGRUENCE VS TIME III

	Local Acceptance of Weather Modification	Phase II	Phase III
Consonant Congruent	No (change)	—	4(4%)
	Yes	98	94(95%)
Consonant Non-congruent	Yes (change)	—	4(33%)
	No	12	8(66%)
Dissonant Congruent	No (change)	—	1(50%)
	Yes	2	1(50%)
Dissonant Non-congruent	Yes (change)	—	2(33%)
	No	6	4(66%)

$X^2 - 4.57$, $p < .05$ (Data were collapsed into a 2×2 table —CC, other vs stability, change — for chi-square computation. Chi-square component from cells with expected frequencies below 5 were not included in chi-square summation.)

TABLE 9. GENERAL ACCEPTANCE OF WEATHER MODIFICATION VS DISSONANCE/ CONGRUENCE VS TIME III

	General Acceptance of Weather Modification	Phase II	Phase III
Consonant Congruent	No (change)	—	1(.9%)
	Yes	105	104(99%)
Consonant Non-congruent	Yes (change)	—	4(33%)
	No	12	8(66%)
Dissonant Congruent	No (change)	—	1(16%)
	Yes	6	5(83%)
Dissonant Non-congruent	Yes (change)	—	2(66%)
	No	3	1(33%)

$X^2 = 7.31$, $p<.01$ (Data were collapsed into a 2×2 table —CC, other vs stability, change — for chi-square computation. Chi-square components from cells with expected frequencies less than 5 were not included in chi-square summation.)

DISCUSSION

The findings reported herein represent a part of the work being done on select-ed social consequences of planned weather modification experiments. The prin-cipal objective of the research effort is to develop a comprehensive theoretical mo-del for the interaction matrix among a variety of social systems including the agency which provides financial support for the experiment, the scientific groups conduct-ing the experiment, other groups within the university which have some control over the various potential actions of the scientific group, mass media organizations, and established emergent interest groups whether private or governmental at the local, state and national level. Since residents in or near the area of the expe-riment might become active in one or more interest groups and organizations oppos-ing or supporting the weather modification experiment, knowledge of their views prior to the experiment is essential and some notion of how their views may change over time will be critical.

It is anticipated that the utilization in the United States of planned weather modification in the next decade will be determined by more than just the develop-ment of an effective technology. The evolving power relations among relevant so-cial systems is likely to be a critical determinant also.