**The Place of Research in Social Choice**

**A Symposium Dedicated to the Memory of William Neil Jessop**

*Director of the Institute for Operational Research, 1963-1969*

*Presented at a meeting convened by the Tavistock Institute of Human Relations*

*at the House of the Royal College of Physicians, London, on 25th November 1969*

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**Chairman’s introduction** by Lord Fulton, Chairman of Council of the Tavistock Institute

Opening the Symposium, Lord Fulton said that the large gathering assembled that evening had been drawn together to record both their affection for a friend and their admiration for the enduring work of a colleague. Neil Jessop's death had come at a time when he was at the height of his powers; he had been cut off long before they had yielded the full harvest which was to be expected. Lord Fulton had known him only a short time but had discovered in that time the rich quality of his character and his essentially forward-looking mind. He had heard with pleasure that the occasion was not to be one of retrospect but of forward exploration of the possibilities in the field in which Neil Jessop and his colleagues had done such distinguished work.

Lord Fulton then introduced Sir Charles Goodeve, Chairman of the Sub-Council of the Institute for Operational Research.

Sir Charles Goodeve recounted that William Neil Jessop had been in on the conception as well as the creation of the Institute for Operational Research. In 1961/62 the Operational Research Society had been exploring the possibilities of setting up an institution like the present IOR. A working party had been set up and Neil Jessop became a central figure on it. He and Professor Russell Ackoff had had the idea of incorporating an operational research unit into the Tavistock Institute of Human Relations. Professor Eric Trist and some others then joined the working party and the proposition began to take shape.

Sir Charles then quoted from the working party’s report, largely written by Neil Jessop and dated November 1962, which went to the Councils of the Operational Research Society and the Tavistock Institute of Human Relations:

*Operational research has been slow in penetrating the broad social and economic sphere, where policy decisions affect the life of the ordinary man profoundly.*

*There is an overall need to tackle problems of a strategic kind, as well as to study the bases of OR methodology. Existing OR groups, although keenly aware of this deficiency, have not the time or the resources to devote to long-term projects which may not even be successful.*

*It is intended that the Institute of Operational Research should extend the field of usefulness of the science, bring it into closer relationship with the social sciences, carry out fundamental research and help to set a standard of training.*

*To extend the field of usefulness of operational research, it will be necessary to explore the application of OR in new problem areas, developing new methods as required and demonstrating the value of such applications. The Institute will particularly explore those areas, of growing importance, in which social science and OR may help each other.*

This report had been adopted and led to the formation of the IOR.

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**STRUCTURES FOR SOCIAL DECISION**

**William Neil Jessop**

**1920-1969**

 **by John Stringer MA**

**INTRODUCTION**

The purpose of our meeting is to honour the memory of Neil Jessop in terms which he had made his deep concern, namely that scientific method should take its place in the making of decisions on matters of real importance to society. It was this concern which supplied both the necessary drive to set up the Institute for Operational Research, and also the ideals which have subsequently informed its work.

This paper is inspired by an unfinished document in which Neil was working out a strategy for the future development of the Institute's role now that certain initial goals had been achieved. I propose to draw from this document a brief analysis of some of the consequences of two beliefs, first that scientific research has the capability to contribute to social decision-making, and second, that this capability is being inadequately utilised at the present time.

Authors of papers are often obliged, by the terms of their employment, to claim the views they express as theirs alone. I am fortunately free of any such obligation. These views are not of my invention; I just happen to share them.

**SOCIAL DECISION**

By 'social decision' I mean those choices of action or commitment which in their cumulative effect tend to determine the future shape of society.

Vickers1 has distinguished `market choice' — the decisions people make on their own behalf; from `political choice' — decisions made on behalf of others. Social choices may be of either category while the word `decision' tries to convey the possibility of the choice being a deliberate one.

There is nothing in this to suggest that social decision-making is necessarily conducted by specialised social institutions such as departments of Government. It takes place at a multitude of `interfaces of choice' — the interactions of people who are `choosers' in a very general sense, and the influence of their interactions on the wider environment.

Depending on the current patterns of societal organisation, the choices may manifest themselves as individual behaviour, as group decision-making, or as some form of corporate or inter-corporate planning. The interfaces may be between members of the family, between employer and employed, between customer and supplier, between individual and the State, between one organisation and another. They may involve co-operation or conflict.

The `point of decision' is a useful concept but we must not forget that decisions have to be made before they can be taken and the making is often a very diffuse process indeed. For the sake of simplicity I shall refer to the `decision-maker' as though he were an individual. In fact it is often a complex social process.

We must also remind ourselves that all problems do not necessarily have solutions (except in the sense that we can learn to live with many problems). Furthermore, no amount of research concerned with decision-making can render value judgements unnecessary. Rather the reverse.

Techniques such as cost-benefit analysis may seem to offer the administrator or politician Hobson's choice of adopting the solution which maximises the measure of net social welfare — for otherwise he will commit the unpardonable sin of irrationality. In fact these techniques make his task harder by bringing up more options than he had thought of and by revealing in stark terms what are the real imponderables and what value judgements are required of him.

**RESEARCH AND THE DECISION-MAKER**

The point is worth stressing. Looking back at those of our projects which have been less than successful, we find the crunch came when the client realised that research was not going to allow him to forget his problem and have the solution presented to him on a plate. We can identify seven crucial events in a successful interaction between researcher and client thus:

 i the state of euphoria in which the work starts;

 ii a divergence of views over what the researcher requires of the client and vice- versa;

 iii a constructive confrontation leading to resolution of the divergence;

 iv a commitment to a design of research and method of data collection which will limit what sorts of results can be obtained;

 v the presentation of the results;

 vi their adoption by the decision-maker;

 vii the budget runs out.

Unlike Jaques' seven ages of man2 however, the order of these seven events can be permuted, but seldom with advantage; commitment to a research plan before resolution of the conflict of purpose, for example, can be pretty disastrous; more so, in a way, than exhaustion of the budget before the results appear, since the latter mishap can be covered by financial provisions which are in principal straightforward.

But I digress. If research is going to make the task of the decision-maker more difficult rather than less, we must ask two questions:

(i) why bring in research at all? and

(ii) what other consequences do we have to consider?

**INADEQUACIES OF THE SOCIAL CHOICE PROCESS**

Quite simply, the prima facie case for research to have a part, is that there exist symptoms in society that the social decision process is inadequate. The following is taken from an internal Tavistock document by J. M. M. Hill on `The Institute and its Environment' which discusses the consequences for our research objectives, of the puzzles that society now presents.

*As we approach the 1970's, it can be seen that the turbulence in society expresses itself not in the form of global wars, such as occurred in the first half of this century, but internationally in a series of minor wars and intra-nationally in social conflicts and dilemmas of apparently increasing severity. Examples are racial conflict, student unrest, changes in sexual mores, attacks on the institution of marriage, industrial strife, the existence of poverty in otherwise affluent societies, etc.*

*One characteristic of these problems is that they pose dilemmas at many different levels of society simultaneously. Social problems (like modern wars) are no longer confined within known regions of expertise but invade the lives of individuals and institutions alike. Drug taking or increased permissiveness, for example, raise concurrent difficulties for young people, for their parents, for educationalists, for law enforcement organisations and for legislators.*

Such problems are connected, albeit indirectly, with social decisions which have been or should have been made in good time in the past. Hill continues:

*However, while social problems seem to be increasing in severity, those who have to deal with them seem not only anxious, but baffled and lack criteria on the basis of which the issues emerging might be confronted with confidence. Traditional modes of thinking derived from politics or religion no longer provide in themselves sufficient guidance for deciding upon what attitudes to adopt or what action to take.*

I do feel that we ought to know by now for instance, that technological innovations arrive and spread amongst us much more quickly than their social effects are appreciated. Long range technological forecasting is a popular pastime nowadays but we also need some sort of early-warning radar to foreshadow the social problems that technological and social trends are stacking up for us in the next few years before they reach crisis proportions. This would be a constructive use of social science but institutions that demand the provision of such a service first need to be developed.

Again, we have those cases where the problem is apparent, the technological solution is known, but social institutions which can implement this solution do not exist. Environmental pollution is a good example, for as Starr3 says:

 *many of our environmental pollution problems have known engineering solutions, but the problems of economic re-adjustment, political jurisdiction, and social behaviour loom very large. It will take many decades to put into effect the technical solutions we know today. To give a specific illustration, the pollution of our water resources could be completely avoided by means of engineering systems now available, but public interest in making the economic and political adjustments needed for applying these techniques is very limited. It has been facetiously suggested that, as a means of motivating the public, every community and industry should be required to place its water intake downstream from its outfall.*

He doesn't say who is to do the requiring though.

Further eloquent evidence of the inadequacy of our social decision processes is the current popularity of demonstration and direct action; of taking political debate into the streets where the argument can hardly be heard above the noise it makes.

**CONSEQUENCES OF RESEARCH IN SOCIAL CHOICE**

We come therefore to the second question which is raised by the incorporation of research in the social decision process, i.e. what are the immediate requirements for the idea to work out in practice?

The first and most important consequence is that since problems will not split clearly into an objective, value-free part and a subjective, value-laden part, the scientist cannot avoid responsibility for the results he provides or the advice he tenders. His values inevitably have an influence.

Second, it follows that since the dialogue between scientist and decision-maker has to be about values, there must be a language of communication between them which is intelligible and useful to both. Insofar as it does not already exist, it must be created and propagated. Rigorously developed conceptual frameworks are needed that match the problems that have to be tackled.

It is not sufficient to ask the scientist to put his point in plain language if plain language does not yet contain the required concepts.

Can we trust the so-called communications media in this regard? The titillating catch-phrase `the medium is the message' used by McLuhan4 in an analysis whose merit, if

any, is literary rather than scientific, gives backing to such meaningless criteria as `is it news?' or `is it good TV?'.

The demonstrators are grateful for the amplification of their voice which TV may give them, but do they not also despise and mistrust the values it represents and the picture it portrays of the way social decisions are made?

Admittedly I cannot quote the extent to which the entry of research into the social decision process improves matters. We cannot know until we have tried, and we haven't tried very hard, nor for very long, as yet. However, the door to the governmental decision mechanism is opening a crack here and there and it is important that those of us who have been knocking on it do not fall flat on our faces if and when the door opens wide.

Third, the institutional forms for social decision-making cannot be the same when they incorporate scientific processes as they were without them.

I would like to examine these three propositions in turn.

***The responsibility of the scientist***

As regards the responsibility of the scientist, I would like to quote from Neil Jessop's document in which he wrote of the ideals he felt his colleagues in the Institute shared.

*It is difficult to define the scientific professional ideals without implying the importance of human values. Improving the science of OR amounts to improving the power of people to choose what they want now or in the future. But people' could stand for `the people', `a few people', `the public', `the country’ and so on. OR can help a political dictator or it can assist democratic government. These two cases will raise different kinds of problem, but they both involve human values and in each case OR will seek to strengthen the scientific basis of choice. To avoid something similar to `nuclear physicist’s conscience' it is as well to be aware of the potential power of our subject, its essentially purposeful nature, and our need to choose, as far as we are able, those who will benefit from this power.*

*Turning to the humane ideals, perhaps the kinds of OR we would all welcome would be concerned with three related classes of problem:*

 *problems of provision*

 *problems of human fulfilment*

 *problems of production*

*In the first class we should include problems of hunger, plague and catastrophe, as well as the problems of the `welfare state' with its still serious problems of poverty, ill-health and poor physical environment. Problems of providing education must be seen at both an individual level — as a 'leading out' of human potential — and at the level of national requirements for skills with which to sustain an economy. An important class of provision is that often called `infrastructure', the public works needed by the country in general, and assets such as roads, docks, airports.*

*The second class of problem concerns people as sentient purposeful individuals in conditions of work, family, community, and leisure activity.*

*Problems of production are those that relate to the creation of wealth upon which the extent of provision for social need and human fulfilment depend.*

*To these three classes of problem, we could add a fourth:*

 *the problem of human survival.*

*This may well be the result of a collective intellectual failure to cope with the upsurge of problems in the first three classes; nevertheless, there is an urgency to promote `rationality' in the conduct of the many international affairs that involve conflict, since failure may well eliminate our other problems at the cost of the subject matter itself.*

*What the foregoing amounts to is a wish to be helpful in a significant way to major problems of human existence. But, to be realistic, our efforts can in themselves make only very small changes so that success lies in capturing the interest of others who can do similar work, and, most important, those who have the power or resources to mobilise for major changes in our institutions.*

***The dialogue about values***

My second proposition concerns the language for communicating values. Tyro operational research scientists soon learn the futility of asking a decision-maker what his objectives are or what his `utility function' is. But they need to know, if they are to help him, and a good method for extraction of the relevant values and trade-offs between multiple objectives is sorely needed.

Recently Gupta5 has suggested a method by which a decision-maker can be asked a few questions chosen so as just to resolve the uncertainty between two courses of action A and B whose effects are multifarious and ambiguous; A being better than B in some respects and worse in others. We intend to find ways of bringing these ideas into practical use.

In a book6 on local government published just before Neil Jessop's death, he and John Friend identify the following `components of difficulty' in arriving at a decision:

*uncertainty as to the effects likely to be produced (leading to a demand for more research of a fact-finding nature)*

*uncertainty as to the way other decisions(later, or involving other agencies) will go (leading to a demand for planning or co-ordination)*

*uncertainty as to what values should be applied (leading to a call for political guidance).*

Making a decision rationally, requires that each of these components of uncertainty be sufficiently reduced. Jessop and Friend also develop in a practical way the concept of `robustness', that is, of making choices such that the outcome is likely to be reasonably good whichever of a wide range of possible futures turns out to be the case.

By these and other means the values problem can be approached when there is a decision-maker who can make up his mind and a researcher serving him. What when the relevant values are those of society at large? One solution which appears at first sight is the `instant referendum'. Admittedly this could be made possible by communications technology. The snag is that we do not have the means for communicating what the questions are about. How, for instance, can we ask citizens what sort of a city they want to live in when the options are in the form of plans or architects' models and cannot be expressed in terms of the quality of life they imply.

The researchers and the planners have a big task here to make the options intelligible to the ordinary man. This task requires imagination and creativity such as may be found in playwrights and TV producers — should not their talents be roped in? Discovering what society wants seems an essential part of a rational social decision process—can we not devise institutions having more excitement and human warmth than the opinion poll and the public enquiry?

*Institutions for social decision-making*

As to my third point, it is not my present purpose to make a detailed critique of the institutions now available to us for social decision-making. One cannot fail to be struck, however, by the persistence of the legal model in public affairs even where they are not concerned with law and order. It is as though we still wished to be ruled by a king sitting in his court, hearing the supplications of his subjects and granting them redress or favour. Development of a scientific approach to decision-making has had little impact.

For example, it was only with the recent setting-up of the Commission on the Third London Airport that the need for a method of public planning enquiry, which could look at several options, has been recognised. This is an attempt, and I suspect an isolated one, to find an institutional form which can identify the components of uncertainty indecision-m and choose and direct the necessary research in such a way as to lead to minimisation of the total uncertainty. That is, there is a need to plan and manage the decision process to ensure that it leads to a solution society will recognise as `good'.

Having hired a research team, the Commission intends, so I hear, to treat their analysis as though it were independent evidence put before it. In other words we still have to find an institutional form which can identify the components of uncertainty in decision-making and choose and direct the necessary research in such a way as to lead to minimisation of the total uncertainty. That is, there is a need to plan and manage the decision process to ensure that it leads to a solution which society will recognise as `good'.

It is true that commissions and other agencies of government are now realising that they need research help but I believe there will need to be a lot more experimentation with modified institutional forms before we have an instrument which can really utilise the capabilities of research by integrating it in the decision process.

I must confess I would dearly love to have the funds and access to undertake a research project with the title of `How best to public enquire' but I suppose the proposal document would lose marks for bad grammar.

I would like to take as a further example, the current debate over the future of the National Health Service. This seems to me to be being conceived in terms of convenient administration of the service with the participation of the health professions. What seems to be missing is a body to apply pressures representative of the values of society at large.

I do not mean an Ombudsman or a Consumer Council. What I have in mind is a permanent Commission of high status able to report on the state of health of the nation and the outcomes of healthcare provision, using the best available scientific techniques to do so.

In the absence of clearly formulated objectives, it is difficult for the health service to know whether it is performing efficiently and in accordance with the will of the community. In time such a body, could, by mobilising public opinion about the real issues, supply a sense of direction which will otherwise be lacking, whatever administrative re-organisations are undertaken.

Whilst I am using governmental commissions and committees as my example, there is another way in which new institutional forms may be needed. It is not nowadays realistic to assume that there will always be a ready and available supply of people with the appropriate experience for such ad hoc bodies. Nor can we assume that industrial, governmental and other large organisations will have such a stability and permanence that each can develop a career structure for its people without reference to the others.

Some of our current work on manpower policies and career development for Civil Service could eventually spill over into the devising of flexible institutional forms which can continually make full use of individual talent and experience whilst adapting and reforming in whatever groupings are required for solution of the problems of the day.

The relevance of this to the design of more appropriate institutional forms than we now have may be apparent. There are many who complain about tinkering with organisation instead of getting down to the `real job that needs doing'. I do not share that complaint, but whim needs to be supplanted by science if the organisational changes, which ought to come with increasing frequency as we learn to adapt our decision processes to keep up with the problems, are to be designed so as to be of maximum benefit.

This means research and experiment on a scale which we have not seen.

**EPILOGUE**

Finally, it is necessary to confess that I have only touched on these few parts of the vast problem of finding appropriate and up-to-date structures for social decision that happen to lie in my experience.

I have not touched, for instance, on the role of education in moulding the values which people bring to decisions at all levels. Society requires a certain amount of common assumption as a working basis. Nor have I mentioned the role of research in helping society to accept and to initiate change.

To talk of `decision-making' as though it were the function of a fined individual is, as I have said, a gross over-simplification in most cases of social choice. The scientist's responsibility cannot, therefore, stop at tendering advice to a given client or even at presenting result the scientific community.

The manner of presentation to the wider audience and the effectiveness of presentation of his results have also to be the scientist's concern. And he cannot pretend to be guided in this solely by objectivity.

Influence is exercised through pressure groups and the more of them that have a scientific basis, the better.

 VICKERS, SIR GEOFFREY, The Art of Judgement, Pitman, 1965

2 SHAKESPEARE, W. As you like it Act II (vii)

3 STARR, C. Social Benefit versus Technological Risk, Science, Vol. l p. 1232

4 MCLUHAN, M. Understanding Media, Routledge, 1964

5 GUPTA, S., STANKARD, M., MAIER-ROTHE, C., Choosing between multiple objective alternatives: a linear programming approach, Working paper of Management Science Center, University Pennsylvania, 1968.

6 FRIEND J. K., JESSOP W. N., Local Government and Strategic Choice, Tavistock Publications, 1969 (USA: Sage Publishing Company, 1969)

**ON THE AMBIGUITY OF THE RESEARCHER AND THE RESEARCHED**

**Russell L. Ackoff University of Pennsylvania**

Neil Jessop’s death was a great personal loss to many of us. It was also a great loss to the profession of Operational Research. Despite his many years in the profession Neil was never wedded to its past, never preoccupied with the good old days and what OR was. Nor was he greatly concerned with what it is. He was concerned with what could be made of it: with its future.

Neil and I spent many hours together discussing OR's potential. These discussions helped us formulate a common set of professional attitudes, attitudes that were based on the belief that a necessary (but not a sufficient) characteristic of scientific research is that it be conducted in such a way as to increase the effectiveness with which at least some future research could be conducted. That is, we believed that every applied research project involves at least two problems: the sponsor's problem and the researcher's problem, the latter being the improvement of the research process itself. Let me refer to the researcher's methodological problems as `meta-problems'. I should like to identify what Neil and I believed to be the most important meta-problems confronting our profession.

Operational Research was originally concerned with finding effective solutions to specific organizational problems. Its practitioners developed better methods, techniques, and tools for doing so. But we found that too many of our solutions were not put into operation and of those that were, too few survived the inclination of organizations to return to familiar ways of doing things. Therefore, Neil and I gradually came to believe that OR’s task should not be so much to solve specific problems as to design problem-solving systems: systems that identify impending or existing problems, that prevent or solve them, and that implement, maintain, and control these solutions under changing conditions. Thus we felt the need for OR to shift its emphasis from evaluation of alternative possible solutions to specific problems, to the design of systems capable of solving a wide range of problems. Hence our first meta-problem was: *How better to design organized systems and systems for managing them.*

Problems seldom if ever arise in isolation, but usually as part of a system of problems. Therefore, to treat them separately and independently is to commit a serious and neglected type of suboptimization. Not only should also we solve a problem from a systems-point-of-view, but we should solve a system of problems. The process of seeking simultaneous solutions to a set of interdependent problems is the essence of planning. Hence our second meta-problem was *the development of an improved methodology of planning.*

The principal value of planning to managers, as we saw it, does not lie in their consumption of its product, a plan; but in their participation in the process of planning itself. Effective planning cannot be done to or for an organization; it can only be done by the organization. The role of the operational research worker in planning is to supplement and assist managers in their planning efforts, not to plan for them.

Most organizations resist change of their operations and management procedures. As a result their central problem is not nearly so much how to obtain better solutions than are currently available to them, as it is how to use the better solutions that are already available to them: how to do as well as they know how. The disposition to change and the commitment to progress that is required for an organization to do as well as it can normally emerges only when it goes through a revolution. Therefore our third meta-problem was: *How to produce a permanent revolution in an organization without a change in its government,* thus avoiding the costs usually associated with such a change*.*

The methods, techniques, and tools of problem solving that OR has developed apply primarily to what might be called `uninodal homogeneous organizations'. A uninodal organization is one that is hierarchically structured. It has a pyramid of authority topped by an ultimate decision maker who can resolve differences between decision makers at any lower level. A multinodal organization has no such ultimate authority and thus requires *agreement* between two or more autonomous decision makers.

A homogeneous organization is one that has greater control over its members than its members have over it. A heterogeneous organization is one whose members have greater control over it than it has over them. Each type represents a range on a scale, and hence in every organization, except a few at the extremes, there are both homogeneous and heterogeneous characteristics, but one usually dominates the other. Corporations tend to be dominantly homogeneous and cities tend to be dominantly heterogeneous.

Because OR has largely been confined to organizations that are uninodal and homogeneous, our fourth meta-problem was *the development of more effective ways of dealing with the problems of multinodal and/or heterogeneous organizations.*

Solution of any of the four meta-problems that I have identified requires a deeper understanding of the purposeful behavior of individuals and groups than we currently have. We need to help *develop behavioral sciences which will enable us to construct explanatory and quantitative models of purposeful behavior*. This was our fifth meta-problem.

In attempts to contribute to the solution of such meta-problems the researcher is always doing research on himself as well as on those whom he is trying to aid. In this connection Neil and I came to believe that the subjects of the research have an important contribution to make, as researchers, to the solutions of the meta-problems in which the researchers are subjects; hence the ambiguity of the researcher and the researched.

I would like to single out for attention one project in which I have been engaged for several years, one in which Neil had a great interest, because it incorporates each of the meta-problems to which I have referred and it illuminates particularly well the ambiguity of the researcher and the researched.

The problems associated with the Black ghettos in urban America are familiar to all of you. Perhaps less familiar are the numerous unsuccessful attempts that have been made by most urban universities in the United States to contribute toward their solution. In 1967 Professors Robert B. Mitchell of City Planning, William Gomberg of Industrial Relations, and I engaged in a series of discussions of these failures and developed what we believed to be a new approach to university aid to the ghetto.

This approach was based on a few very simple assumptions. First we assumed that inhabitants of the Black ghettos should be given an opportunity to solve their own problems in their own way; that they will not and should not accept `white solutions' because whites have demonstrated no particular competence in solving the Black's problems. Furthermore, we believed the Blacks could learn more from even their own failures than they could from our successes. Thus, we concluded that the best the white community can do to help the Black community is to enable it to solve its problems in the way it, the Black community, wants to. Our task, then, was to try to make the resources of the University available to the Black community to use as it, not we, saw fit.

Our approach required receipt of a request for aid from a Black ghetto. Shortly after coming to this conclusion in February of 1968, a modest request for drafting assistance come to us from Forrest Adams, a Black planner employed by the newly formed Mantua Community Planners (MCP) which was a coalition of the five most active organizations in the neighbourhood just to the north of our University.

Mantua covers about 80 city blocks and has a population of approximately 22,000, 98 % of whom are Black. By almost any standard it is a critical poverty area. Almost 25 % of its housing units are overcrowded, and more than 50 % of them are in sub-standard condition. Its male unemployment rate falls between 15 and 20 %, more than three times higher than the rate in the city of Philadelphia as a whole. 37 % of the families of Mantua earn less than $3,000 per year, only half-way up to the so-called `poverty line.' The educational level is very low: more than a third of Mantua's residents who are over 25 years old have had less than eight years of education. Nearly 40 % of its minors receive some type of public assistance, more than six times the city rate. 16 % of its population from 7 to 17 years old were arrested in 1964, nine times the rate in the city as a whole. Its adult crime rate was more than twice that of the remainder of the city. The disadvantaged and underdeveloped state of Mantua is obvious.

The three of us arranged for a meeting with Mr. Adams and Herman Wrice, President of a group called the Young Great Society (YGS). Mr. Wrice was the most prominent emerging leader in the community. At that meeting we offered to employ any three people from the community selected by them to work on the development of their community in any way that those so employed saw fit. The only requirement was that they be literate. The three were selected within a day. They were Andy Jenkins, President of the Mantua Community Planners and Vice-President and co-founder with Herman Wrice of the Young Great Society; Richard Hart and Mrs. Doris Hamilton, Treasurer of MCP. A fourth employee was added a short while later. They were given office space (which they never used), secretarial aid (which they used occasionally), and a graduate student to serve as an assistant (whom they used extensively). It was made clear that the faculty involved would volunteer nothing but were available for help as the group saw fit. The Mantua team members were told that they would be completely self-controlling, even with respect to hours and location of work They had no need to ever come to the University except to pick up their pay checks.

Funds for support of this activity were obtained from the Anheuser-Busch Charitable Trust which enthusiastically supported the concept and the effort based on it. The initial grant was enough to cover only nine months of work. The three from the community were aware of this. In order to stretch the funds this far the three faculty members involved provided their services at no cost. This turned out to be a blessing in disguise. Subsequently other faculty members, none of whose time could be bought, were willing to give some of it to this effort.

The three on the Mantua team asked us to meet with them on their first day of work. They presented for comment a program of activity which they had developed over the weekend, and they proposed regular weekly meetings with us in order to review their progress. Before I review that progress with you, let me cite a few important events that occurred subsequently.

Within a few months it became apparent that in order to meet and coordinate all the requests for aid that were coming from the team, and all the people from the University who were involved in providing it, a full-time senior member of our staff was required. Marvin Rees took on this job.

At the end of about the sixth month of the effort, the Mantua team and the University group collaboratively prepared a proposal for continued support of their joint effort. The proposal was submitted both to the Anheuser-Busch Charitable Trust and to the Ford Foundation. It was the Mantua team's decision that any additional funds that might be obtained continue to come to the University and not directly to it. Much to our delight each of the foundations came through with $50,000 per year for two years.

Since the project began in February of 1968, the Mantua Community Planners and the Young Great Society have grown considerably in size and strength. They and their leaders, Andy Jenkins and Herman Wrice, are by far the most significant development forces in their community.

They are acknowledged as such not only in Philadelphia, but increasingly at the state and national levels as well.

Let me review that part of what they have done in which the University has been able to be of some help to them.

MCP created and operates a Credit Union in which Mantuans can have savings accounts that permit deposits with no lower limit, and from which they can obtain loans at relatively low interest rates. With University aid MCP has been instrumental in obtaining loans from banks for the establishment and operation of a number of small businesses in its area and in providing these enterprises with needed technical and managerial assistance. YGS has set up nine manufacturing firms, two of which have been particularly successful. One makes plastic engravings, the other makes electronic circuit boards. The latter is supplying such companies as IBM, General Electric, and Leeds and Northrop. The nine businesses grossed a little more than $1.5 million in the last year and employed about 125 people from the community. An Industrial Park is currently under development. It will serve as a hot-house for new business enterprises by providing space and a wide variety of types of assistance to the businesses that it nurtures.

Both MCP and YGS provide employment services and have placed several hundred Mantuans in the last two years. Furthermore, these two organizations themselves employ about 330 people in activities that they manage. Together they solicited and brought about $600,000 into the community last year, all of which was used on development programs.

These two organizations jointly operate an architectural and planning workshop that is staffed by University faculty and students as well as by members of the community. The workshop has produced neighborhood development plans for which some financial support has already been pledged, about $6 million worth. The workshop has also planned the renovation and rehabilitation of a number of houses in Mantua. The reconstruction work has been done by local contractors using indigenous labor most of which was trained on the job. The workshop has also done the architectural planning required for the many facilities used in the many activities of the two sponsoring organizations.

An economic development plan has been prepared which resulted in the formation of the Mantua Industrial Development Corporation which is in turn responsible for the Industrial Park to which I referred.

Open community meetings are held monthly by M CP at which all plans for the community are reviewed and from which approval of these plans is required. Attendance at these meetings has grown constantly. Block groups have been organized to help develop enlightened public opinion on issues of importance to the neighborhood.

Communications within the community have been enhanced by a weekly hour-long broadcast conducted by MCP over one of the city's radio stations. YGS has successfully launched two weekly neighborhood newspapers that are distributed and widely read even beyond Mantua, and that yield a profit derived from advertising income.

Their educational program is extensive. A school for 150 children in their fifth to eighth grades was opened in September of 1968. This Mini-School, as it is called, is completely controlled by a neighborhood board which selects its own teachers and designs its own curricula. It is supported by both the city's Board of Education and a grant from the Rockefeller Foundation. This school is characterized by innovative pedagogy and relevance of content for disadvantaged children. Additional schools of this type are currently being planned.

A voluntary group of faculty from my college (The Wharton School) together with MCP, Y G S, and Black groups from neighborhoods other than Mantua conduct an evening program in business education at the University. This program is open to the disadvantaged of the entire metropolitan area. It is now in its second semester and has about 90 students enrolled in it. Several of those who attended the first semester were given scholarships in the regular day-time degree program of our college. The program also provides an employment service.

This coming September the Benjamin Banneker Urban University will open in Mantua. It will have a number of collaborative programs with our own and other universities. It will be a university with no entrance; only exit, requirements. The building has been acquired. Physical and academic planning is well along.

Scholarships to privately operated suburban schools have been obtained for several children from Mantua. Tutorial programs for needy children are provided as are programs for assisting new teachers in the neighborhood's publicly operated schools. MCP sponsors Boy and Girl Scout troops.

Limited physical and mental health services have been initiated within the community. These include a mobile clinic that goes to the people rather than waits for them to come to it. The Department of Community Medicine of our University and members of the community are now actively engaged in seeking support for an extensive health-services program which they have collaboratively designed for Mantua.

Too large a number of social and welfare services are provided to review here. But I should mention the great effort that has been put into elimination of gang warfare. This effort eliminated all violence in the summer of 1968 but was not as successful this last summer. Planning for a more effective program for this coming year is about to be initiated.

MCP arranged for the City's Department of Recreation to convert two city-owned parking lots into recreational areas. MCP sponsors a basketball league which uses these facilities. They are also used for outdoor shows, dances, food sales, raffles, and other community activities. MCP has held a number of outings for neighborhood children. The most recent was attended by more than 800 children. Use of the University's indoor swimming pool by neighborhood children was arranged during the summer. MCP sponsors dramatic, music, and dance classes in the community. The students of the dance recently put on an evening program in the University's auditorium which was professional in quality and exciting in conception and execution. It also made a profit.

I could go on but I think I have gone far enough to give you a picture of what has been and is happening. The four from the community that we support in turn support a large number of others all of whom are working on community development. Our own services are available to any individual or group in the community that asks for them. At times we have as many as thirty members of the University's faculty and staff involved in such support. Our roles have been many and varied. But these need not be enumerated. What is important is that the relationship has survived two tumultuous years and is the stronger for it.

Initially we had to hide the fact that we were supporting the members of the Mantua team least they be rejected by their community as pawns of the University or as `Uncle Toms.' By their behavior and accomplishments they have established their independence of our influence and can now openly acknowledge our support, and even use this to their advantage. Our relationship is now taken for granted in the neighborhood. The friendships we have formed with Mantuans extend beyond the boundaries of the project but have helped integrate us into their community.

We have learned much more about the nature of the ghetto by being involved in it under the direction of its members than we could have learned by any traditional type of academic research. More important is the fact that our expertise in the ghetto is now acknowledged by its leaders. I know of no other way by which this state could have been brought about. One consequence of this is that whereas we were initially asked to help only on problems involving external relationships, we are now deeply involved in problems internal to the ghetto. A second consequence is that our special knowledge of, and relationship to, the ghetto is acknowledged by our University's administration. Hence we are used as advisors on University-Community relationships and have helped design and operate new functions and units within the University that are concerned with these relationships.

It is easy to become absorbed by the humanistic aspects of this experience but I believe the scientific and managerial implications of it are also important. I should like to dwell on these by reconsidering the meta-problems previously referred to in the context of the project that I have described.

First note that we the researchers designed a relationship with the `subjects' in which the subjects conducted research on us. It was the community members' task to find out how to use the University effectively and by so doing to solve the researchers' problem. Not only would we have been rejected by the community if we had tried to do research on it, but even if we had not been rejected we would not have had such access to it as we have had.

At first glance this relationship of researcher to researched may seem to be relevant only to the specific type of situation involved in our project. But is it? Although universities have had some success in serving governmental and industrial organizations, they have not been nearly as successful as many would like. I suspect the reasons for their lack of success are related to my remarks about the ghetto.

We in operational research do not know government and industry as well as we think we do and administrators and managers know this. Therefore they tend to use us in restricted and highly structured ways, on specific problems on which we have propogandized them into believing that we have some competence. But much of this use of our services is only token. Perhaps we should not tell administrators and managers how to use us, but rather involve them in systematic efforts to find out what we can best do and how they can best use us. This may well change our conception of our skills, but in return we may be given the opportunity to become a more integrated part of organizational decision-making, planning, and development processes.

Secondly, the types of planning problems in which we have been traditionally engaged involve organizations which already have enough resources at their command to attain further growth and development. Hence allocation of available resources, rather than generation of new resources, preoccupies our planning efforts. In ghettos (and, I might note, in underdeveloped countries) this is not the case. Few resources are available. Hence planning in the ghetto is very sensitive to potential sources of resources and to the uses for which they can be obtained. This requires development of plans that are much more integrated with those of the larger community of which it is a part than is usually the case in most governmental and industrial planning. I have never seen planners as sensitive to and aware of the plans made by the larger units of which they are a part, as I have seen in the ghetto. They insist on knowing about what is going on `up there' and they often understand the implications of higher-level plans better than do those who prepare them. How can we reproduce this state in government and industry?

The ghetto cannot use the annual budget as an instrument of planning because it never knows what resources will be available to it over even shorter planning periods. Hence its planning must be *continuous*. Its long-range plans cannot be built up out of arbitrary fiscal blocks.

Furthermore, because plans cannot be imposed on a Black ghetto from above, they must be supported from below. Thus its planning must also be *participative*.

Planning in government and industry is seldom either continuous or participative. But shouldn't it be? The preoccupation of managers and administrators with making a good showing in the current fiscal year leads to an imbalance of concern with short- and long-range performance, in favor of the short. Where planning is continuous, concerned with both the long and short of the future, and adaptive (as it must be in the ghetto), this imbalance does not occur. Promotions are not a motivating force in the ghetto because there is not a hierarchical structure; increase in the scope and importance of jobs is a motivating force, and this is largely under the control of the individual involved. He is not bound by charters and job descriptions. Might not a little more of this in government and industry be desirable?

We have tended to build our institutions in such a way as to minimize errors of commission, but we have thus increased errors of omission. The emerging structure of the ghetto has reversed this condition. It is more concerned with not doing something that should be done, than with doing something that does not need to be done. This orientation, it seems to me, is more likely to yield progressive development than is the converse orientation of most of our institutions.

The ghetto is not an organized system let alone a highly structured hierarchical one. Hence its leaders can only survive by effectively serving both their constituents and the larger community that contains them. Without support of the larger community, ghetto leaders cannot get the resources and programs that they require to serve their constituents. Without serving their constituents they cannot retain any followers. Hence only effective leaders can survive. Most decline more rapidly than they rise. This is not true in either government or industry where Peter's Law — everyone rises to his level of incompetence — seems to hold almost universally.

The ghetto leader has neither rank nor authority vested in him from above. Therefore he cannot use these to get others to do what they do not want to do. He must know what his followers want, what they can be persuaded to do, and how he can persuade them to do it. If these skills were available to those who currently direct others by virtue of rank and vested authority, imagine how much more effective they would be.

I know of no better way to develop such skills than by giving collective control over an authority to those who are individually controlled by that authority. Such control can even be built into bureaucracies by the introduction of participative management. Such managements have been suggested by many but implemented by few.

We are witnessing an almost world-wide pressure for participative democracy in public affairs and in universities. Can business, industry, and governmental agencies be far behind? I don't think so. Therefore, current leaders in these institutions would do well to study and gain understanding of the successful ghetto leader. They too may have to convert from the art of management to the art of leadership.

Finally, let me deal with the reluctance of the ghetto, like governments and industries, to change, to exploit the few resources that are already available to them. Ghettos do not push their leaders, they are pulled by them. Ghettos have to be led into internal revolutions. In Mantua we have observed the development and exploitation of an effective way of doing so. The motto of the Mantua Community Planners is: "Plan, or be planned for." This recognizes an important fact that is both obvious and ignored: it is not true that if nothing is done, nothing will happen. A great deal will happen and most of it will be undesirable. Ghetto leaders are aware of the fact that most current trends in the larger communities that include their neighborhoods are detrimental to that neighborhood's interests. These trends are the subject of their constant study and analysis. They educate their constituents to an awareness of these trends and their consequences. Thus the effective ghetto leader has a knowledge of and concern with his environment that few governmental or industrial leaders have. The latter tend to take their environment for granted and feel that by perceiving changes in it and adapting to them, their organizations can at least survive and may even grow. Hence they take little responsibility for what happens in their environment. No so in the ghetto. Its leader cannot afford to let the environment take its own course. However limited his effect on it may be, he uses all his power to push his environment in a direction that is compatible with his aspirations for his neighborhood. He believes in active intervention in the larger community and its future because he knows that his neighborhood cannot thrive unless the larger community thrives. He not only knows this, but he acts on it. Can we say the same about leaders of other types of institutions?

Neil Jessop knew and felt about OR in the same way that the effective ghetto leader knows and feels about his ghetto. Neil was not willing to let OR develop only in response to changing external conditions. He wanted to help create a world in which the capabilities of OR were considerably extended but in which the need for OR was diminished. Like the ghetto leader whose objective it is ultimately to dissolve the ghetto by having it absorbed into the main current of the culture of which it is a part, so Neil's objective was the dissolution of OR as an autonomous and segregated activity by having it absorbed into every aspect of the organizational life of which it is a part.

It is hard for me to imagine any environment in which Neil could better have pursued his dream than here at Tavistock. This Institute was already rich in relevant traditions of involvement and change that reinforced Neil's efforts, and he reinforced those of the Institute. Neil was fortunate to have found a home here, and Tavistock should be eternally grateful that he did.