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A PROPOSAL FOR APPLYING THE SCIENTIFIC METHOD TO HELPING SOLVE  
THE PROBLEMS OF INTERNATIONAL ATOMIC ENERGY CONTROL

Institute for Social Research  
University of Michigan  
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## INTRODUCTION

By far the most urgent problem facing the world today is that of establishing effective international controls of atomic energy and the other major potential instruments of war. Under the circumstances, it is ironic that the most powerful method for solving problems that has ever been discovered, namely, the scientific method, should be used to create these potential instruments of war and not used to discover how to establish effective controls over them. This statement describes how the University of Michigan, as part of its Memorial Phoenix Project, plans to use the full power of the scientific method in the attempt to find a solution to the pressing problem of establishing effective international controls over the instruments of war. The scientific method offers, by far, the greatest promise of discovering a workable solution to this and related problems.

## The Problem

Senator McMahan, in a speech on the H-Bomb and the need for international control of atomic energy, made the following statement:

“More than three and one-half years have elapsed since Bernard Baruch, as spokesman for the President of the United States, Harry S. Truman, presented our official plan to the United Nations. He delivered one of the greatest addresses known to the English language, saying -- and I quote:

‘We are here to make a choice between the quick and the dead.

‘That is our business.

‘Behind the black portent of the new atomic age lies a hope which, seized upon with faith, can work our salvation. If we fail, then we have damned every man to be the slave of fear. Let us not deceive ourselves: we must elect world peace or world destruction.’

“We may as well bluntly recognize, here and now, that in the ledger of life and death, the ledger of world peace and world destruction, there is only one entry on the hopeful side; the study, the improvement, and finally the endorsement of the American proposal by an overwhelming majority of the United Nations.

“On the death side of the ledger, on the side of world destruction, there have been repeated entries -- a succession which began when Mr. Gromyko, as the Soviet delegate, stated that our plan is unacceptable either in whole or in part. For the sake of confusing world opinion, the Kremlin has retreated somewhat from that statement, using phrases too vague to define; but basically Mr. Gromyko’s words reflect the Soviet attitude as accurately today as when they were uttered.”

The American Society of Newspaper Editors’ Committee on atomic information, in collaboration with the Bulletin of the Atomic Scientists, has prepared a series of articles on the A-Bomb and the H-Bomb. The following is taken from the first:

"A great number of America's top scientists are worried.

"They are worried by the new means of destruction that may soon be given to man in the hydrogen bomb.

"They fear that Americans have not been told what this and other new weapons can do to them -- and that Americans are not deciding -- and not even being given the means to decide -- how to behave in a world that contains these new weapons.....

"The scientists, the Bulletin reports.....all believe we cannot 'rely on nuclear or other weapons alone to preserve peace and national security.' All 'call for new and imaginative political action for world unity and peace, and see in superior weapon development at best a means to gain time and put additional force behind this action.' "

General Carl Spaatz concluded two articles in LIFE on "Atomic Warfare" with the following statement:

"When the statesmen of the world have perfected some political formula for replacing war between nations, we will no longer have to maintain the most powerful air force in the world. And unless the good society is able to produce such a political formula an atomic war may end in the most tragic of paradoxes: the good society, in attempting to destroy evil, may destroy itself."

These statements put the issue of the implications of atomic energy clearly before us. The problem is to develop an effective international control of atomic energy. The Michigan Memorial Phoenix Project recognizes that this is a central problem in the peacetime use of atomic energy and proposes to do research on it.

This problem, however, is only part of a much larger problem as the following statement by Ambassador Philip C. Jessup indicates:

"The difference between the UN and the Soviet plans reflects a fundamental cleavage between the aims of the majority and the minority. Representatives of Canada, China, France, the United Kingdom and the United States reported as follows to the General Assembly in 1949: 'All the Sponsoring Powers other than the USSR put world security first and are prepared to accept innovations in traditional concepts of international cooperation, national sovereignty and economic organization where these are necessary for security. The Government of

the USSR puts its sovereignty first and is unwilling to accept measures which may impinge upon or interfere with its rigid exercise of unimpeded state sovereignty.' ”

In order to achieve international control of atomic energy, it will be necessary to develop a method for establishing working agreements with the Soviets. The basic problem, therefore, is how can the western democracies achieve a working relationship with the Soviets which will yield a satisfactory workable plan for atomic control as well as an end to the unwarranted use of force by the Communists in unprovoked aggression.

The approach to this problem which is being followed by the United States has been described by Secretary Acheson:

“In considering how we go down the road toward the achievement of peace, I think that we have to understand the nature of the Russian Government with which we have to deal and I am sure that it is clear to you that the outstanding characteristic of the Soviet Government is its purposefulness. It is determined to reach certain goals which it wants very much to reach.

“Now, in part, the Soviet Government is ideological and in part, it is imperialistic, but in whole it is incompatible with the present achievement of a world situation which is based on peace and the maintenance of national independence and freedom.

“What we have also observed over the last few years is that the Soviet Government is highly realistic, and we have seen time after time that it can adjust itself to facts when facts exist. We have seen also that agreements reached with the Soviet Government are useful when those agreements register facts or a situation which exists, and that they are not useful when they are merely agreements which do not register the existing facts.

“You have had a great many illustrations of that. You have seen it, for instance, in the Berlin situation. We had all sorts of agreements with the Soviet Government as to our right to be in Berlin, the purposes for which we were in Berlin, and our right of transit through the Soviet area to and from Berlin. All those matters were clear, but when it suited the purpose of the Soviet Government to interfere by force with our access to Berlin, it did not hesitate to use that force. You saw also that when we took vigorous action with our allies through the airlift and it became disadvantageous to Soviet foreign policy to continue its obstruction, it

stopped the obstruction. So, you see, it is not a matter of agreement but a matter of registering the existence of a situation.

“You saw the same thing in Greece. We had all kinds of agreements through the UN and otherwise not to interfere with the integrity of any sovereign nation. Yet when it suited the purposes of the Soviet Government and its satellites to foment internal rebellion and armed conflict in Greece they did not hesitate to do so.

“It was not a question of agreement. We argued, we went to the UN, we created commissions, we did everything that we possible could to bring about agreement regarding Greece. But the Greek situation became solved only when the most vigorous action by the United States, the Greek Government and the Greek people resulted in the suppression of this internal revolution and the restoration of Greek economy.

“You saw the same thing in Turkey. All sorts of pressures were brought to bear on Turkey regarding the Straits. But when that situation was dealt with vigorously, Soviet policy adjusted to it.....Thus, what I want to stress is that agreements with the Soviet Union are useful when they register or record an existing situation of fact, but otherwise they are not of much use.

“So it has been our basic policy to build situations which will extend the area of possible agreement; that is, to create strength instead of the weakness which exists in many quarters. It has, therefore, been our policy in Germany to try to restore the economy of Germany, to try to get the German people in a situation where they will look forward with hope to becoming again an important part of the Western European community. That has also been the purpose of the occupation in Japan.

“The whole purpose of the economic recovery program in Western Europe is to create strength instead of weakness. That is the purpose of the arms program; that is the purpose of the Point Four program. These are illustrations of the way in which in various parts of the world we are trying to extend the areas of possible agreement with the Soviet Union by creating situations so strong that they can be recognized and out of them can grow agreement.

“Now, this road is a very long one and a very difficult one. It takes purpose, continuity of purpose, perseverance, sacrifice ----- and it takes, more than almost anything else, very steady nerves. You not only have to consider the nature of the Soviet Government but you have to consider the nature of the world within which we have to deal with the Soviet Government.”

The basic problems that we face, therefore, if we are to establish effective international atomic control are:

1. The establishment of overwhelming support throughout the world for freedom and the democratic way of life.

This requires:

- (a) developing an understanding of the democratic way of life, a loyalty to it and a skill in its use on the part of all peoples of the world, especially at first among those outside the Iron Curtain.
  - (b) helping the poverty-stricken, famished people and nations of the world to achieve a satisfactory level of living and one that they can maintain and improve progressively through their own efforts and resources.
2. The creation of world-wide public opinion pushing vigorously for the development through the UN of a strong world organization with adequate controls over atomic energy.
  3. The establishment through the United Nations of a world organization and society powerful enough to protect the freedom and peace of all people and strong enough to exercise adequate controls over atomic energy and other potential instruments of war.

An Approach to the Solution of the Problem

The experience of recent years and months makes clear that it will be very difficult to carry through successfully the policy outlined by Secretary Acheson. It is clear to all that we must succeed. The purpose of this proposal is to point out that the effectiveness of our efforts can be increased substantially by utilizing the scientific method.

The most striking fact about our efforts to date is that we have failed to utilize to any appreciable extent our most powerful tool, the scientific method. This is the case even though it was the application of the scientific method to our physical universe that has made the problems we face so serious. The major reason for not attempting to use the resources of the scientific method in seeking a solution to our problem probably stems from the recency of the application of this method to the problems of social organization, human relations, attitudes and motivation. Tremendous strides have been taken in recent years, both in the development of methodology and in substantive findings but these developments are so recent that few government officials or congressional leaders are aware of their scope and potentialities.

Any attempt to utilize fully the resources of the scientific method in efforts to achieve effective solutions to the problems we face necessarily will involve a broad program of research and many interrelated specific studies. This proposal can only suggest and illustrate what might be done and indicate what might be expected from the proposed research. The projects suggested are necessarily illustrative and tentative. They will be developed by careful research planning before any work starts and will be modified by the research findings obtained and by changing events. As the research proceeds, additional projects will be suggested by the results, and the whole program will progress in a systematic step-by-step manner.

The research to be successful will require close cooperation between the researchers and the appropriate operating officials of national governments and international agencies. The experience of the Institute for Social Research of the University of Michigan indicates that close cooperation can be readily established when competent research is done on important operating problems. Moreover, as rapidly as the value of specific research projects or programs are demonstrated, appropriate governmental agencies will be encouraged to take over the research as part of their normal activities.

## Building World-Wide Support for Democratic Government

Perhaps the best way to indicate how the scientific method could assist us in solving our international problem is to examine what we are now doing and point out how the effectiveness of our present efforts could be increased by means of research. Through the Marshall Plan we are providing billions of dollars of food, machinery, etc. to help chiefly European countries reestablish their economies and push themselves to new levels of productivity. We are starting to help backward countries through the Point Four program to benefit by the use of modern technology and health practices. We are giving many countries military assistance in the form of arms and equipment as, for example, in helping the countries in the North Atlantic Pact. We are also giving direct military support as, for example, through the United Nations in Korea. Throughout all of these efforts we have endeavored to work with other nations in a cooperative democratic manner and to foster the democratic way of life by our practices and example.

Without question many of our efforts have achieved significant success. The Economic Cooperation Administration has been appreciably more successful than most people thought possible. But we are trying to accomplish changes in a few years which formerly would have taken decades or centuries. Backward or autocratic nations do not easily nor rapidly develop into effectively functioning democracies. Consequently, it is not surprising that some of our efforts are yielding disappointing results. Something went wrong in China. All is not well in the Philippines. Elsewhere in the world there is evidence that we have not been successful in developing effective democratic leadership and strong democratic traditions.

A recent dispatch to the New York Times from a meeting of the United Nations Economic and Social Council in Geneva, Switzerland included the following:

“The policy of the United States has been to establish order, provide economic assistance, require local authorities to carry out free elections and then say in effect: ‘Now take care of yourselves.’ It has felt that its mission was accomplished when forms of constitutional government like those with which Americans are familiar have been established without fully realizing that these forms are ‘meaningless’ to most of the people in countries like Korea, Japan, and even Germany and Greece. Reports of the deterioration of social conditions and public order in the Philippines have done much to strengthen this view.”

Results of recent research on leadership, principles of organization, attitudes, and changing attitudes and behavior indicate that we should expect the results that the United States has obtained from the methods that have been used. During the last few years, for example, considerable research<sup>1</sup> has been done to discover what principles of leadership and what forms of organizational structure produce the highest productivity and the greatest satisfaction to the employees or persons concerned. Although this work has been done chiefly in industry, research in other fields indicates that the conclusions derived seem to be generally applicable.

It is significant for our way of life that the results obtained indicate that those principles of leadership which are most productive and most satisfying to the workers are those which are most democratic. Charts 1 through 6 present some of these results. But more relevant to this discussion are the results which prove that supervisors do not become skilled and effective by being given the machinery or equipment required for the job. Assuring them of adequate police protection and support also does not facilitate their learning the best methods of supervision. Telling them the best principles and methods also proved relatively ineffective in improving their capacity for democratic leadership. In one famous experiment<sup>2</sup> it was discovered that telling leaders of boys' groups to practice "democratic" leadership resulted in their using methods which could most correctly be described as "laissez-faire". It is significant that these leaders were well educated persons who had lived their lifetime in a well-developed democracy. No wonder "telling" people in different countries how to be democratic leaders is so ineffective.

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1 Coch, Lester and French, John R. P., Jr.: Overcoming Resistance to Change, Human Relations, Vol. I, No. 4, 1948.

French, John R. P., Jr. and Zander, Alvin: The Group Dynamics Approach, Psychology of Labor-Management Relations, Industrial Relations Research Association, 1949, pp. 71-80.

Jacobson, Eugene: An Analysis of Foreman-Steward Power-Relationships, Survey Research Center, University of Michigan.

Katz, Daniel: Employee Groups: What Motivates Them and How They Perform, Advanced Management, The Society for the Advancement of Management, September, 1949.

(Continued on Page 9)

2 Lippitt, Ronald: An Experimental Study of Authoritarian and Democratic Group Atmospheres. In Lewin, Kurt; Lippitt, Ronald; and Escalona, Sibylle; Korsch; Studies in Topological and Vector Psychology I. Iowa City, University of Iowa Press, Vol XVII, No. 3, 1940, pp. 45-198.

Supervisors of High Producing Groups are More Democratic in Their Dealings With Their Employees

## DEMOCRATIC

" I ALSO TRY TO DISCUSS EVERYTHING WITH THEM... AND I WOULD CHANGE MY IDEA IF THEIRS SEEMS TO BE BETTER. THAT'S WHY WE HAVE DISCUSSIONS.... "



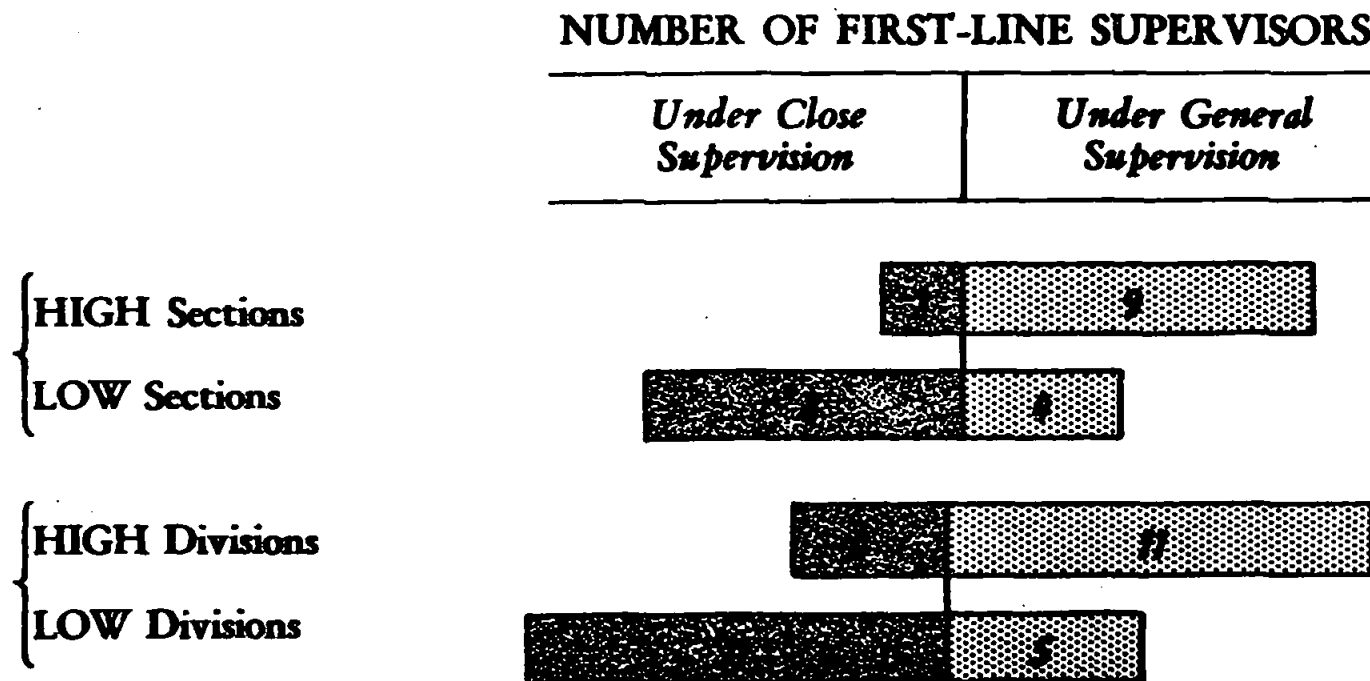
Whereas Supervisors of Low Producing Groups Tend to be Authoritarian

## AUTHORITARIAN

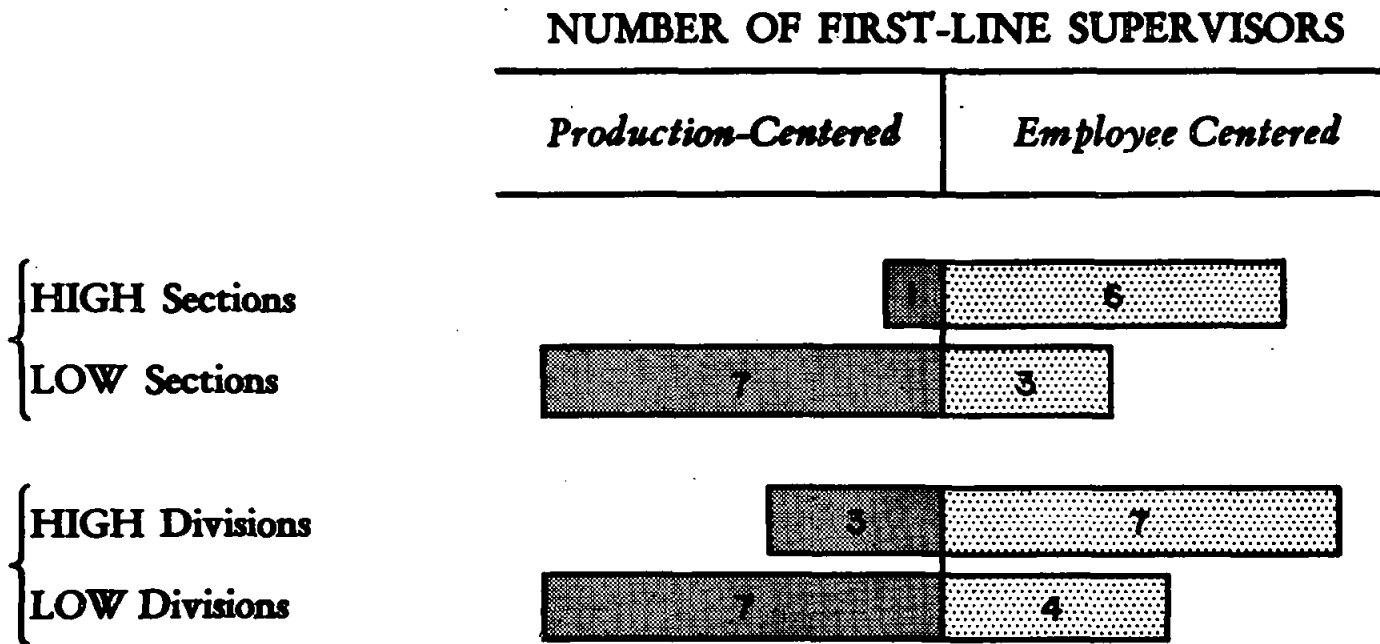


" IT'S MY JOB TO GET THE EMPLOYEE ... TO PRODUCE. HAVE TO WORK UP EFFICIENCY CHARTS THEY ARE MY ARGUMENT IF I HAVE TO MAKE ANY COMPLAINTS. "

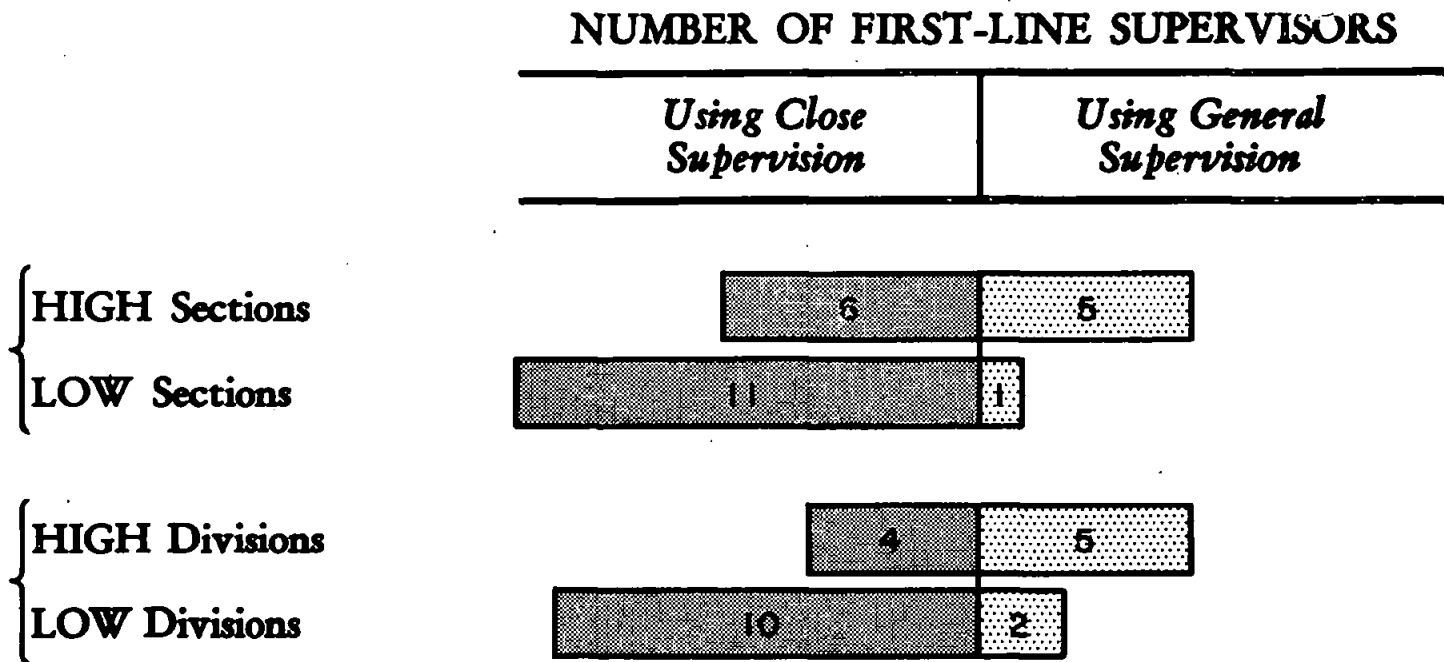
**Low-production section heads are more closely supervised than are high-production heads . . .**



**“Employee-centered” supervisors  
are higher producers  
than “production-centered” supervisors . . .**

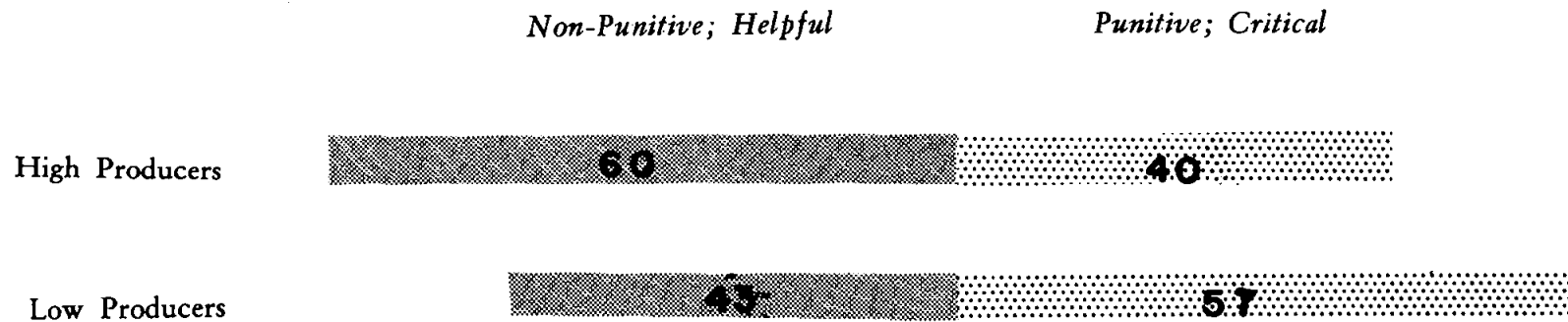


**In turn, non-supervisory employees  
in low-production sections  
are under more detailed supervision . . .**

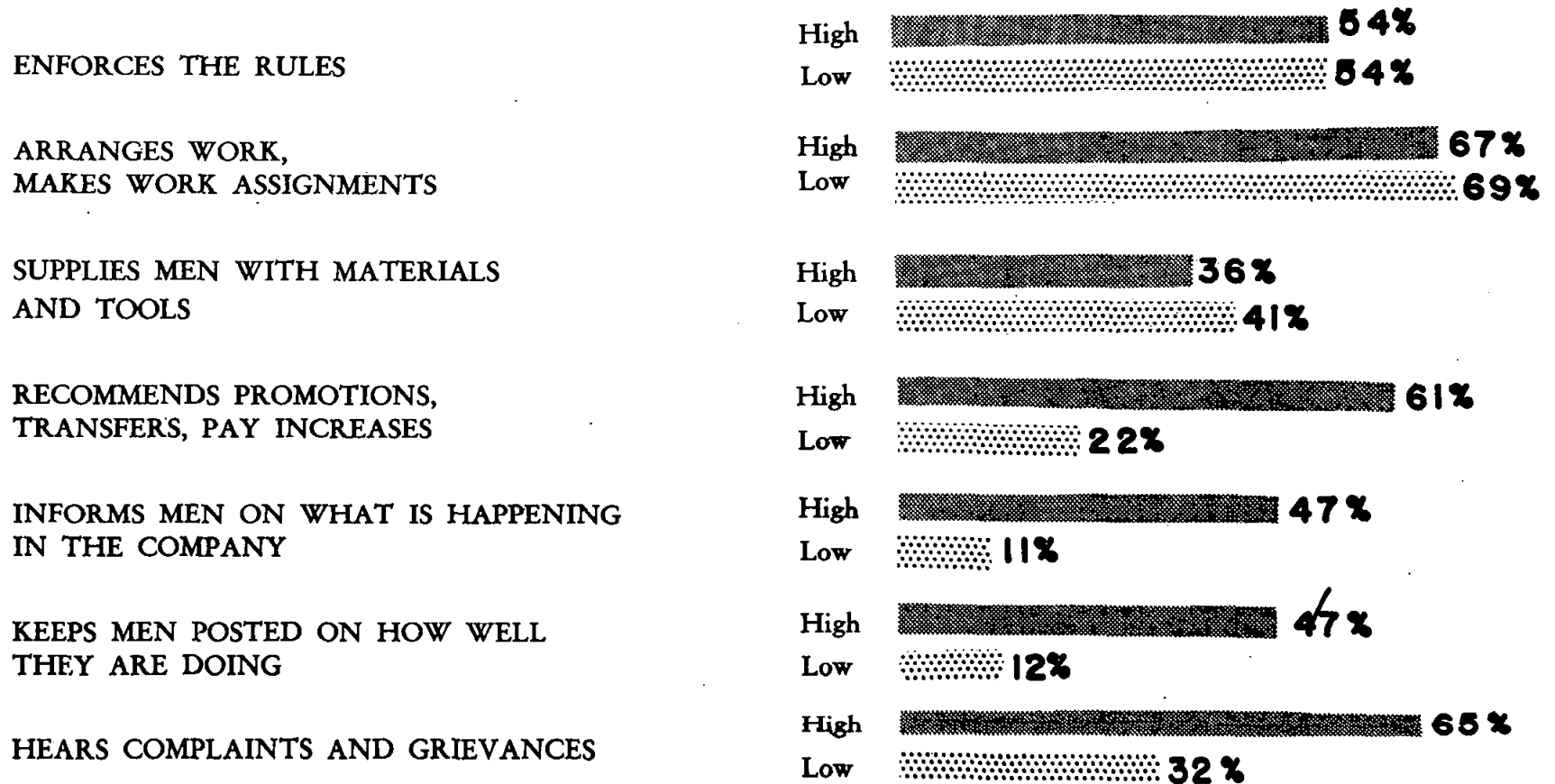


The high-producing foreman is helpful and understanding when his men do a poor job.

FOREMAN'S REACTION TO A POOR JOB



# Percentages of high and low morale groups describing what their supervisors do



Although relatively little research has been done on how to train supervisors to use effective principles of leadership, yet enough work has been done to show that there are wide differences in the results produced by different methods. Moreover, those methods which seem to be most effective<sup>3</sup> employ principles which other research has shown to be most effective in improving skills in leadership in other types of situations. Experimentation currently underway by the Survey Research Center

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<sup>1</sup> (Cont.)

Katz, Daniel: Morale and Motivation in Industry, Current Trends in Industrial Psychology, pp. 145-171, University of Pittsburgh Press, 1949.

Katz, Daniel: The Role of Quantitative Research in Group Organization and Group Function, Survey Research Center, University of Michigan, March, 1949.

Katz, Daniel: The Attitude-Survey Approach to Labor-Management Relations, Proceedings of the Industrial Relations Research Association, 1949.

Katz, Daniel and Likert, Rensis: Supervisory Practices and Organizational Structures as They Affect Employee Productivity and Morale, Personnel Series No. 120, American Management Association, 1948.

Maccoby, Nathan: The Relationship of Supervisory Behavior and Attitudes to Group Productivity in Two Widely Different Industrial Settings, Survey Research Center, University of Michigan, 1949.

Maccoby, Nathan: Research Findings on Productivity, Supervision and Morale, Survey Research Center, University of Michigan, March, 1949.

Productivity, Supervision and Employee Morale, Survey Research Center, University of Michigan, November, 1948.

A Program of Research on the Fundamental Problems of Organizing Human Behavior, Survey Research Center, University of Michigan, March, 1947.

Productivity, Supervision and Morale in an Office Situation, Human Relations Report 1, Series 2, Institute for Social Research, Survey Research Center, University of Michigan, December, 1950.

<sup>3</sup> Mann, Floyd C. and Likert, Rensis: The Need for Research on Communicating Research Results, Survey Research Center, University of Michigan, 1949.

Zander, Alvin: Resistance to Change: Its Analysis and Prevention, Advanced Management, 1950, Vol. XV, No. 1, pp. 9-11.

and the Research Center for Group Dynamics of the University of Michigan is demonstrating that substantial improvement in democratic leadership by supervisors can be achieved and within a reasonable period of time. This experimentation is partly in industry and government and, through the National Training Laboratory in Group Development, partly in education, social welfare agencies, and similar organizations.

The significance of the research results that have been mentioned for the course of action that the United States should pursue in dealing with the international situation is extremely important. The fact that we can measure the attitudes of any population and the skills of their leadership means that for any nation or group of people we can measure how democratic they are and appraise what practices on our part will facilitate the development of democratic traditions in the population and the emergence of leaders skilled in democratic procedures.

The evidence is perfectly clear. It is not sufficient to help people economically, give them military aid or even the forms of democratic government. Important as these steps are, they are not sufficient. To defeat communism in each nation and locality, the local leadership and people generally must understand and skillfully use democratic procedures and have a deep devotion, derived from experience, to the democratic way of life. Throughout the world people need to acquire the processes and traditions of democracy in a form suited to their cultural heritage. At present we are depending upon trial and error and bungling ultimately to achieve this result but there is not time for this slow, wasteful process. Democratic leadership in government, as in business, appears to be more difficult to learn than other forms of leadership. Its greater effectiveness does not seem to result in people readily stumbling on to it. Measurement and an experimental approach can be used to help nations throughout the world to acquire skills in the democratic process, to develop democratic leadership at the grass roots and national level, and to make the democratic tradition an integral part of their culture, and thus become effectively functioning democracies. The procedures for utilizing the scientific method to achieve these objectives will not differ substantially from that employed in discovering in industry and government the leadership principles which are most productive and most satisfying to all concerned and how most effectively to train people to apply these principles.

At the present time, the United States is not utilizing this approach in our efforts to establish effective democratic traditions and government in Germany, Asia, South America or anywhere else. Our efforts to develop powerful, cooperative support from all parts of the world for free, democratic negotiation and agreement on international problems is likely to fall if we rely solely on such influences as dollars, food and armaments. If we wish to build the powerful support that Acheson has so clearly indicated is necessary, it is imperative that we buttress our efforts by building this support with the full power of the scientific method.

### World-Wide Public Opinion Support Is Needed

In marshalling world-wide support for the democratic approach it is also important that public opinion be mobilized. The development of democratic traditions at the local level will contribute greatly to this but more general efforts are also needed. The public opinion of the world needs to become sufficiently aroused about the basic international problem to support fully those political leaders who are prepared to take the drastic and unorthodox steps required to solve the problem in the time available. The slow steps of traditional diplomacy will not evolve an effective solution to the problem in time.

An essential step in achieving effective international support behind democratic procedures is marshalling the public opinion of the world firmly and positively behind such an approach. The importance of informing people throughout the world as to the basic issues involved and of giving them an opportunity to exert their influence on policy was clearly stated by Senator McMahon. In his address he said:

“If a crusade for peace is not to miss its objective, as did the peace effort which we launched with such high hopes in 1946, we must not only crack the Iron Curtain and gain the ear of the Russian people -- we must also gain the ear of people on the near side of the barrier, including the many in our own country who do not yet grasp what is at stake.

“We have spent \$29,000,000 a year on what we are pleased to call the Voice of America. It should be called the Whisper of America. We spend over \$30,000,000 a year to advertise cosmetics --- and \$29,000,000 I repeat, to sell the precious commodity of freedom.

“All over the world today -- perhaps because listlessness and mediocrity have characterized our attempts to sell what America is, what America wants and what America intends -- there exists misunderstanding as to our attitude.

“The thirty years of vilification emanating from behind the Iron Curtain in Moscow have taken a toll on our reputation as a peace-loving and a peace-loving nation. There are millions of people abroad who observe our armaments expenditures and fail to grasp that these are for self-defense.

“They should appreciate the truth, but they do not. We assume that our actual good intentions and actual good feelings must be known to them; but they see that we devote billions to guns, tanks, planes and atomic weapons --

and day and night the Communist propaganda machine hammers into them the theme that American armaments are designed for conquest.

“Even worse, they do not see -- at least with the same clarity -- the huge resources being diverted to munitions inside Russia; for the Iron Curtain conceals such activity and even enables Mr. Vishinsky to deceive multitudes by claiming that his country uses atomic energy to ‘move mountains’.

“I advocate, Mr. President, a United States program of attention-arresting foreign broadcasts that would compare in size and scope to the Soviet effort along this line and that would genuinely deserve the name, Voice of America. I favor exploring the efficacy of printing millions of leaflets for world-wide circulation, explaining a new United States proposal for atomic peace.”

Senator McMahon's address clearly states the need for marshalling opinion throughout the world firmly behind the democratic objective. He also presents convincingly the need for tackling the problem on an adequate scale. What is overlooked is that the volume of the effort does not determine the success achieved. Unless facts are presented to the different peoples of the world not only in their languages, but by sources they trust, in concepts they understand, and stressing what they feel is important, the impact of such facts is likely to be very disappointing. To present information effectively requires the full utilization of available social science research resources.

Fortunately, there is a substantial body of existing scientific findings available to guide any informational efforts, but even more useful are the methods available for measuring the success of each step and learning why it was or was not successful and what needs to be done to assure that the next step will have maximum effectiveness. This process of continuous measurement to appraise each step and guide the next can be applied to efforts to influence peoples' knowledge, opinions and behavior. Moreover, it can be done separately for each large and important group. Some of the kinds of groups for which the results might well be analyzed separately are geographical, political, cultural, economic, and educational. Results might also be analyzed separately for the leaders of large groups. The available research methods can be used to discover:

- (1) how best to present the case for the need of finding a constructive solution to the international problem;

- (2) how to stimulate constructive thought and discussion of the problem; and
- (3) how best to obtain understanding and support for those suggested plans of action which, after careful and widespread study and analysis, appear most promising.

This research to guide the development of public understanding and public opinion can be done in all parts of the world, even behind the Iron Curtain, although the accuracy of these latter measurements will necessarily be less than where more direct measurements are possible. Studies demonstrating that this can be done have already been completed.

The University of Michigan is especially well qualified to engage in this research since its Survey Research Center (a division of the Institute for Social Research) is one of the best-equipped research organizations of the world to conduct surveys with these objectives.<sup>4</sup> Studies have already been made by members of the Center's staff utilizing in other languages and countries the methods of the Center.<sup>5</sup>

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<sup>4</sup> Some publications illustrating or describing the work of the Survey Research Center are:

- a. Campbell, Angus, et al: Measuring Public Attitudes, The Journal of Social Issues, May 1, 1946.
- b. Campbell, Angus, and Metzner, Charles: Public Use of the Library, Institute for Social Research, University of Michigan, March, 1950.
- c. Cartwright, Dorwin: Surveys of the War Finance Program, Proceedings of the Conference on Consumers' Interests. University of Pennsylvania Press, 1947.
- d. Cartwright, Dorwin: Some Principles of Mass Persuasion, Human Relations, Vol. II, No. 3, pp. 253-267, 1949.
- e. Likert, Rensis: The Sample Interview Survey, Current Trends in Psychology, University of Pittsburgh Press, 1947.

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<sup>5</sup> Illustrative of these studies are:

United States Strategic Bombing Survey: Morale Division Report on Germany, I: Morale Division Report on Germany, II: Morale Division Report on Japan, Superintendent of Documents, Washington, D. C., 1946-1947.

The methods used by the Survey Research Center differ fundamentally from those used by the polling organizations. For example, in contrast to the procedures employed by the polls, the Center's interviewers have no choice in selecting respondents. The specific addresses and persons to be interviewed are selected by means of unbiased procedures in the Center's sampling section in Ann Arbor. The interview is not a ten-minute, door-step affair with questions and short answers, but a series of questions, many of them quite general, which usually takes an hour or so to cover. These questions are designed to introduce the topic and the respondent is encouraged to answer the questions fully concerning how he sees the problem and with whatever elaborations he wishes. Other important differences also exist in the methods of interview analysis. The basic research designs used in the surveys and all the steps in the process differ from simple polling procedures.

In building a world public opinion which powerfully supports the democratic approach to international problems, it is not sufficient to tell the people of the world about the urgency of establishing control over the A-Bomb and the H-Bomb or about our sincere and generous intentions. For it is not what people are told that counts -- it is what they accept. There is much evidence that many persons throughout the world do not now believe what we are honestly and sincerely telling them. We must and we can use the scientific method to discover why they do not believe us and how to modify what we say and what we do in such a way as to make our honest attitudes clear to all.

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<sup>4</sup> (Cont.)

- f. Likert, Rensis: Opinion Studies and Government Policy, reprint from Proceedings of the American Philosophical Society, Vol. 92, No. 5, 1948.
- g. An Appraisal of the Third, Fourth, Fifth, Sixth, Seventh and Victory War Loan Drives, Division of Program Surveys, 1943-46.
- h. A National Survey of Liquid Assets, Federal Reserve Bulletin, June, July, August, September, 1946.
- i. Survey of Consumer Finances, 1947, 1948, 1949, 1950, Federal Reserve Bulletin, 1947, 1948, 1949 and 1950.
- j. The American Public Discuss Cancer and the American Cancer Society Campaign, Survey Research Center, University of Michigan, 1948.

### Participation is Essential

Social science research has produced a substantial body of evidence proving that to convince people and to obtain their active support it is necessary to do more than tell them what the facts are and what the desirable courses of action are.<sup>6</sup> To be convinced people need to participate or be involved and have their thinking and experience drawn upon. This very fact is one of the great powerful forces of democracy. If we try to "sell" freedom in the usual manner, we are very likely to fail. However, if we invite others to join us in such efforts as examining the problems that people face throughout the world and endeavoring to work out the best way to meet these problems, we are much more likely to gain genuine acceptance and support. We must believe sufficiently in our institutions and form of society to be willing to examine them objectively with others and to modify and improve our solutions whenever such an examination yields ideas as to where and how an improvement can be made. If our efforts are to succeed, we must treat the rest of the world with the dignity and respect accorded to equals when we invite them to participate with us.

In building a world public opinion there is need, therefore, not only to use research to extend the effectiveness of such media as the Voice of America but there is need also to create opportunities for the peoples of the world to join together and to participate in dealing with the international problems that we face.

Only by joint participation in dealing with these problems will the peoples of the world become convinced of the urgency of the problems, of the desirability of certain courses of action, and most important of all, of our genuine sincerity. Unless people throughout the world are convinced of American sincerity there will be little public opinion throughout the world pressing for cooperation with us to establish world order and the control of atomic energy.

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<sup>6</sup> Coch, Lester, and French, John R. P., Jr.: Overcoming Resistance to Change, Human Relations, Vol. I, No. 4, pp. 512-532, 1948.

French, John R. P., Jr. (with Alfred Marrow): Changing a Stereotype in Industry, Journal of Social Issues, 1945, Vol. I, 3, pp. 33-37.

Lewin, Kurt: Group Decision and Social Change, Readings in Social Psychology, pp. 331-344, Henry Holt and Company, 1947.

Lewin, Kurt: Forces Behind Food Habits and Methods of Change, Bulletin of the National Research Council, Vol. CVIII, pp. 35-65, 1943.

Lewin, Kurt, and Grabbe, P. (eds.): Problems of Re-education, Journal of Social Issues, Vol. I, No. 3, August, 1945.

Zander, Alvin: Resistance to Change: Its Analysis and Prevention, Advanced Management, January, 1950.

An important area for research and experimentation, therefore, becomes the discovery of how to create constructive opportunities for governments and especially for the rank and file of people throughout the world to participate and become involved in parts of the total problem. It will probably be particularly important to involve the leaders of local communities. These opportunities for participation can be created. Their effectiveness in achieving the over-all objective will certainly depend upon the extent to which they are guided by scientific research as to what kinds of participation in what kinds of situations produce attitudes and skills most strongly in support of democratic approaches to the solution of international problems.

Scientific research can therefore be used to marshal world public opinion problems by guiding the use of mass media and the use of procedures for achieving participation and cooperation.

### Building A Strong International Organization

An effective solution to our international problems requires a strong international organization. Consequently, an important area of research involves a series of related studies on how to make international organizations and conferences effective.

One approach is to do research on international conference and committee procedures. The value of this approach stems from the importance of conferences and committee meetings in the activities of international organizations. An important respect in which the United Nations and its specialized agencies differ from the former League of Nations is in the use of conferences and committees. The UN makes extensive use of conferences and committees in arriving at important decisions and in working out many technical and political problems. So important have these become that the United Nations Educational Scientific and Cultural Organization (UNESCO), for example, is fostering research on how to make such meetings of maximum effectiveness.<sup>7</sup> At a recent meeting of social scientists and representatives of the UN and UNESCO

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<sup>7</sup> Zander, Alvin: The 1950 meeting of the World Federation for Mental Health; A Study of An International Conference, Research Center for Group Dynamics, University of Michigan.

considerable interest was expressed in the research and there was a widespread feeling that this research could be useful in helping the conferences of the international agencies to be more successful.

The Conference Research Project at the University of Michigan is a pioneer effort in research on the process of conferences. This is already yielding important material on how decision-making conferences can be made more productive.<sup>8</sup> Similarly, many of the studies of the Research Center for Group Dynamics of the University of Michigan point to the value of research for improving the productiveness of group meetings.<sup>9</sup>

Important gains in the degree of success achieved by international conferences and committee meetings, both technical and scientific, can be expected when available scientific findings and principles are applied to them and existing methods are used to study what makes them succeed or fail in specific situations. Important results can be obtained by doing research systematically on each of the different kinds of committee meetings and conferences and relating the degree of success achieved by each to the principles and practices employed in the meetings. The successive application of previous findings to new meetings will result in the progressive development of a body of knowledge on how to make international committees and conferences more effective in achieving their objectives.

The continuing and all pervasive conflict in the United Nations and its commissions between the communists and the democracies may require research specifically on how to conduct successful conferences in this conflict situation. It certainly will be important to examine the effect of the presence or absence of power on the part of the democracies upon the kind of agreements that are reached, the process required to reach the agreement, and the stability of the agreement.

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<sup>8</sup> Guetzkow, Harold and Kriesberg, Martin A.: Executive Use of the Administrative Conference, Personnel, 1950, Spring.

Kriesberg, Martin A. and Guetzkow, Harold: The Use of Conferences in the Administrative Process, Public Administration Review, 1950, Spring.

<sup>9</sup> French, John R. P., Jr. and Bradfore, L.: The Dynamics of the Discussion Group, The Journal of Social Issues, Vol. IV, No. 2.

French, John R. P., Jr.: Field Experiments: Changing Group Productivity. A chapter in Experiments in Social Process, McGraw-Hill, 1950. In Press.

In addition to this research necessitated by the dominant conflict that exists between the East and the West, general research on conference procedures will be valuable in increasing the effectiveness of meetings and committees among the democracies themselves. One important source of power in dealing with international problems is to increase the cooperation and effectiveness with which the democracies function as a team.

Strengthening International Organizations by  
Strengthening Their Secretariats

Extensive research should be done also on the problems of building a competent staff to operate any international organization, for this is another broad problem area related to the effective functioning of international organizations. No plan of world organization or atomic control will be any better than the competence of the staff who is responsible for implementing it. The same is true of the UN and its specialized agencies. No matter how sound their charters, they will be no better than their secretariats. This point, obvious though it may be, has been badly neglected. Fortunately, it is an area ripe for development based on existing scientific knowledge and current research. The Institute for Social Research is conducting extensive programs of research on the problems of organizing human behavior and on group productivity.<sup>10</sup> These programs are yielding results and methods directly applicable to the problem of building in any organization a secretariat that is competent and highly motivated.

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- 10 a. Productivity, Supervision and Employee Morale, Survey Research Center, University of Michigan, November, 1948.
- b. Productivity, Supervision and Morale in an Office Situation, Survey Research Center, University of Michigan, January, 1951.
- c. A Program of Research on the Fundamental Problems of Organizing Human Behavior, Survey Research Center, University of Michigan, March, 1947.
- d. Productivity, Supervision and Morale Among Railroad Workers, Survey Research Center, University of Michigan. To be published in 1951.
- e. Effective Morale, FORTUNE, August, 1950.

Results from this research in American industry and government probably are directly applicable. Other research in this country and in Europe is also directly related to this problem. The available evidence indicates that a substantial improvement in the morale and the effectiveness of the secretariats of international organizations could be achieved by applying the scientific findings now available and studying with existing methodology the functioning of these secretariats.

### The Proposed Projects are Only Illustrative

The research projects which have been proposed here are, of course, only illustrations of the research that is now possible and necessary if the serious international problems that we face are to be solved satisfactorily. Other projects could be mentioned and those that have been discussed could be elaborated in greater detail. The purpose has been to present enough evidence to demonstrate clearly that the scientific method can be applied to help solve these urgent international problems.

The Memorial Phoenix Project has unique resources. It possesses a flexibility of action greater than that of any governmental agency and has at its disposal at the University of Michigan greater facilities than any other institution in the world for scientific research on the human dimensions of our international problems. This flexibility and these facilities will permit the Phoenix Project to initiate research and then to encourage governmental agencies to take over this research as fast as the value of the research has been satisfactorily demonstrated. This will enable the Phoenix Project to use its resources to pioneer and extend the use of the scientific method to tackling the major problems that must be dealt with successfully if atomic control is to be achieved.

It is particularly appropriate for the Phoenix Project to devote substantial resources to conducting scientific research on how to solve our international problems including the problem of how to establish effective international control of atomic energy. Until these problems are solved and international atomic control is established, peace-time applications of atomic energy are an empty promise. Achieving constructive solutions to our international problems will be a very difficult task. It may not be possible to achieve this goal in the time that we have available. The probability of success, however, will be greatly increased if we utilize the full power of the scientific method on the problems we face.

## The Budget

The different programs of research that have been suggested serve to illustrate how the resources of the scientific method can be utilized to help solve the pressing international problems. The research can be conducted on a more or less extensive basis. Useful research can be conducted with as little as twenty-five to fifty thousand dollars. However, such an amount would necessarily seriously restrict the research. Annual sums several times larger will be required to utilize fully the potentiality of a scientific approach. The more extensively research is used, the greater will be the cost of the research.

The extreme seriousness of the problem plus the existing evidence that the scientific method can be applied fruitfully to the elements of this problem make it highly desirable to secure sufficient funds to use research extensively. If research programs of the kinds suggested are undertaken and with appropriate additional studies when the need for them is evident, a very substantial sum could be used effectively.

It is expected that this program of research will run at least ten years since there is virtually no likelihood of solving the basic problem in less time. It is impossible to estimate how much beyond ten years the research will be required, but, clearly, there will be serious need for the research until a satisfactory international situation is firmly established.

The details of the proposed research programs can be readily spelled out. Similarly, ample evidence can be provided that this research will yield fruitful results. This evidence is available in the proven value of results from similar research on other problems. The social scientists who have had experience with the kind of research that has been proposed have a great and growing confidence in its power and its potentialities. No single approach is going to solve our international problems, but our greatest hope of finding a successful solution will necessarily utilize fully the potentialities of the scientific method in dealing with the complex human problems involved.

The proposed research, if conducted on an adequate basis, will be expensive, but its cost will be negligible compared to the savings and benefits that its results will help in an essential way to achieve. For example, the cost alone of decentralizing industry and cities to protect them from an atomic attack will be much greater than that of the proposed research. Moreover, we are now spending billions of dollars each year to protect ourselves against an atomic attack and the indications are that this amount will be increased.

No problem is more difficult nor more important than achieving the kind of peace which will guarantee basic human rights to all peoples. The symbolic significance of the Memorial Phoenix Project will be realized as the programs of research actually succeed in helping to achieve this objective and thereby establish safe, international control over atomic energy.

Rensis Likert, Director  
Institute for Social Research  
University of Michigan  
Ann Arbor

SUPPLEMENT

EVIDENCE THAT THE SOCIAL SCIENCES  
HAVE DEVELOPED METHODOLOGY APPLICABLE TO PROBLEMS SIMILAR  
TO THOSE INVOLVED IN  
ESTABLISHING INTERNATIONAL CONTROL OF ATOMIC ENERGY

CAN ACCURATE INFORMATION  
ON SUCH ITEMS AS OPINIONS BEHAVIOR AND ECONOMIC MATTERS  
BE OBTAINED BY MEANS OF SAMPLE INTERVIEW SURVEYS?

There is ample evidence that opinions can be measured scientifically. In the democracies, opinions on a wide variety of questions are being measured and the results published from time to time. However, can accurate measurements be obtained from respondents on confidential matters or on items where it may not be to their advantage to indicate their opinions?

Financial matters are usually considered relatively confidential but accurate data on such items are being obtained.\* For example:

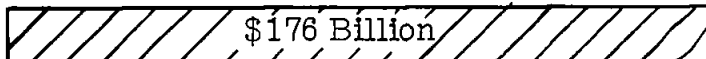
Estimates of 1948 National Income

for U.S. Families Living in Private Households

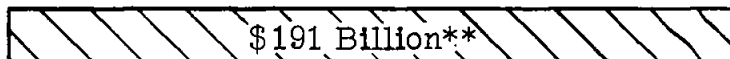
Average money income (before taxes) of a nationwide sample of 3,500 spending units based on personal interviews\* . . . . . \$3490

There were, at the beginning of 1949, 50 1/2 million spending units in the United States living in private households.

\$3490 x 50 1/2 million =

\$176 Billion

National income estimates of the Department of Commerce, based on aggregate amount of wages, etc. paid to individuals.

\$191 Billion\*\*

\*See 1949 Surveys of Consumer Finances conducted for the Federal Reserve Board by the Survey Research Center, University of Michigan, and published in the Federal Reserve Bulletin, June-December, 1949.

\*\*The Department of Commerce published an income estimate of \$195 billion (after excluding non-money incomes); it is estimated that about \$4 billion income was received by institutional, military and transient people who do not live in private households.

WILL THESE METHODS OF MEASUREMENT  
WORK IN DIFFERENT COUNTRIES?

Most members of the American Army of Occupation believed that Nazi Germans after the war would endeavor to hide their former membership in the Nazi party. The Morale Division of the United States Strategic Bombing Survey, however, obtained the following results in a sample interview survey concerned with discovering the effects of bombing on German civilian morale.

Nazi Party Members\*

Estimates based on data obtained from Morale Division interviews with 3711 persons:

5,646,000

Estimate of the number of Nazi party members among the civilian population only

8,006,000

Estimate of Nazi Party members among both civilian population and Armed Forces

7,000,000

Estimate of Nazi Party membership based on captured party files. Includes civilian members and only part of the members in the Armed Forces

\*Sources: The Effects of Strategic Bombing on German Morale, Morale Division, The United States Strategic Bombing Survey, Vol. I, May, 1947. Superintendent of Documents, Washington, D.C.

Peak, H.: Observations on the Characteristics and Distribution of German Nazis, Psychological Monographs, 59, 1945, pp. 37-44.

The New York Times, October 18, 1945, p. 13.

CAN USEFUL MEASUREMENTS BE OBTAINED  
FROM GEOGRAPHICAL AREAS  
TO WHICH ACCESS IS NOT READILY AVAILABLE?

It was, of course, impossible prior to the German defeat to interview German civilians or to examine at first hand the effect of bombing on German Civilian Morale. Nevertheless, during the period from November, 1944 to March, 1945 measurements were obtained which employed several different methods. When these measurements were checked by data obtained after V-E Day, they proved to be substantially correct.

For example, some of the conclusions yielded by the early studies and confirmed by the post V-E Day research are as follows:\*

1. Morale is lowered as bombing exposure increases.
2. Increments in bombing produce decrements in morale but at a decreasing rate.
3. Disruption of community life and of utilities had a particularly marked adverse effect upon morale.
4. Bombing undermined German propaganda to the home front, especially "news" reporting, and caused serious loss of confidence in the Nazi leadership.

\*Sources: The Effects of Strategic Bombing on German Morale, Morale Division, The United States Strategic Bombing Survey, Vol. I, May, 1947. Superintendent of Documents, Washington, D. C.

The Effects of Strategic Bombing on German Morale, Morale Division, The United States Strategic Bombing Survey, Vol. II, December, 1946. Superintendent of Documents, Washington, D. C.

ARE SURVEY DATA USEFUL  
IN UNDERSTANDING FORCES AT WORK  
AND IN PREDICTING TRENDS?

During the first few months of 1949, businessmen, government officials, and economists were predominantly pessimistic. The following few quotations may help to recall the opinions that prevailed at that time:

“Most industrial executives see a general business decline this year.”.....

“Among the factors adding to the general air of pessimism are: Higher labor and material costs;...a drop in the general level of business activity because of the completion of many post-war expansion programs.....” (New York Times, February 14, 1949, report on a meeting of the National Industrial Conference Board.)

As Sumner Slichter reported in the New York Times Magazine of July 17, 1949:

“We have done a fairly complete job of talking ourselves into a depression.”

The 1949 Survey of Consumer Finances, conducted by the Survey Research Center for the Federal Reserve Board and based on 3500 interviews made during the first ten weeks of 1949, yielded a different conclusion. In the words of reports published in May and June, 1949:

“The proportion of consumers who felt their financial position was at least as good as, or better than, a year earlier, was larger at the beginning of 1949 than in any recent year.”

“Consumer plans to buy automobiles, other durable goods, and houses at the outset of the year were, on the whole, about as large as buying plans reported early in 1948.”

The Federal Reserve Board published detailed evidence derived from the survey not only about the strong financial position of the economy but also that people's willingness to spend had not been affected by their belief that the period of inflationary price increases had ended.

The relative accuracy of these predictions is well summarized by the following which appeared in the New York Times on April 30, 1950, shortly after the publication of the first results from the Center's 1950 Survey of

Consumer Finances:

“ . . . . . it has been indicated by a Federal Reserve Board survey of consumer finances and spending ideas that the green light is still gleaming for purchases of homes, automobiles and home appliances. A year ago the same report was made and more than slightly disbelieved. It turned out that business leaders were wrong about a major downturn and that the public would continue to buy although it thought that prices were a bit on the high side.”

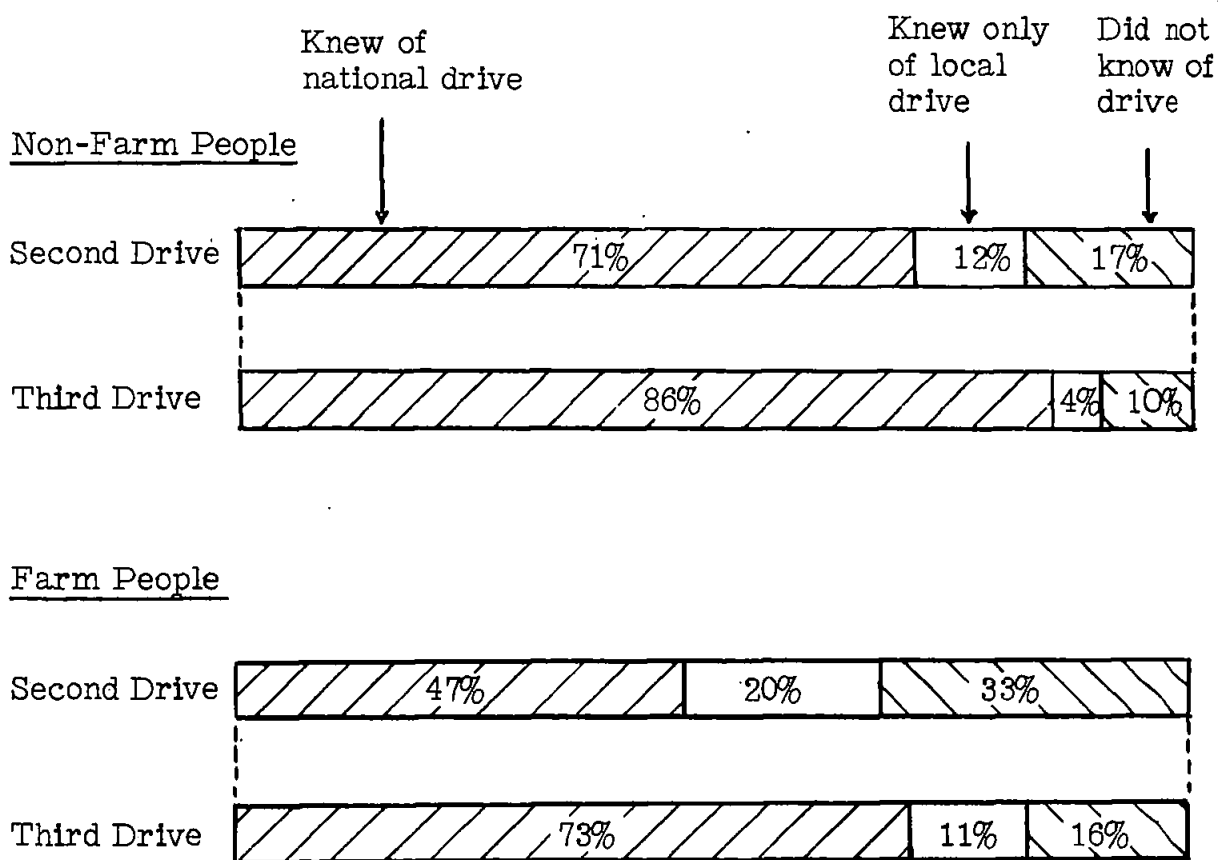
THOUGH INFORMATION AND BEHAVIOR

CAN BE MEASURED

CAN RESEARCH HELP TO PRODUCE CHANGES IN INFORMATION?

When results of a study of the effectiveness of the publicity for the Second War Bond Drive were applied to efforts for publicizing the Third Drive, the following improvement was obtained:

How Many Were AWARE of the Campaign?



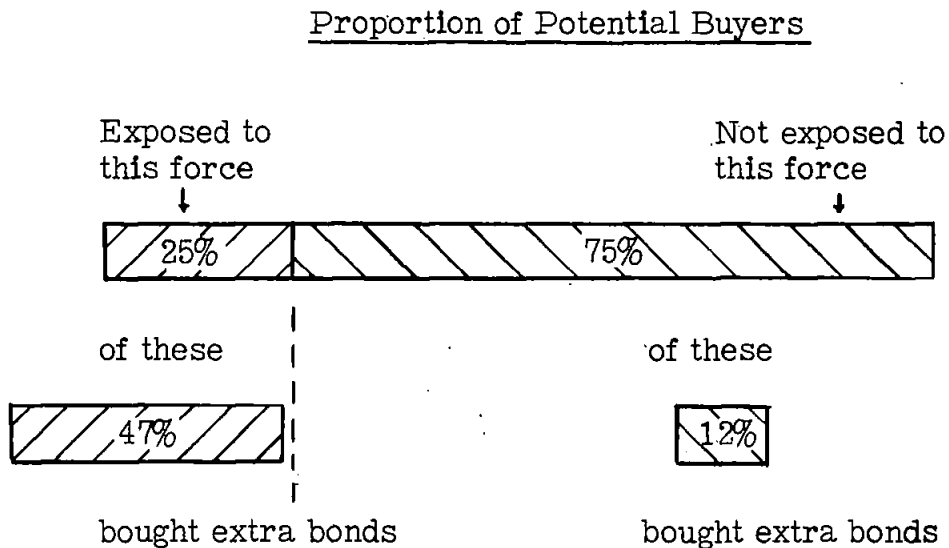
Sources: An Appraisal of the Second War Loan Drive, The Division of Program Surveys, U. S. Department of Agriculture, June, 1943.

An Appraisal of the Third War Loan Drive, The Division of Program Surveys, U. S. Department of Agriculture, October, 1943.

### CAN RESEARCH BE APPLIED TO CHANGING BEHAVIOR?

When the Second War Bond Drive was studied to discover in what ways it had been effective and in what ways ineffective, measurements were obtained on the number of potential buyers who had been exposed to various motivating forces. Data were obtained also on the effectiveness of the different motivational forces by measuring for each motivational force the proportion of potential buyers exposed to it who bought additional bonds.

The results for one motivational force\* were as follows:

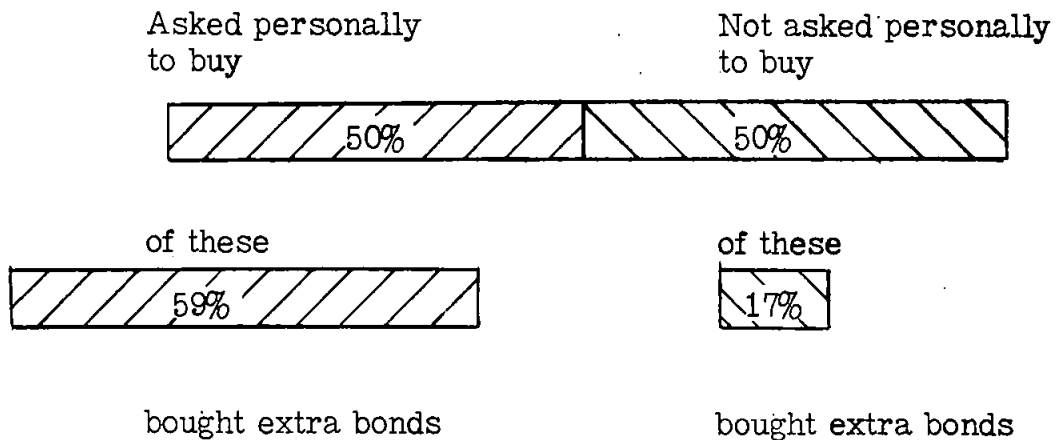


The Treasury Department applied this finding in the Third Bond Drive with the results shown on the next page.

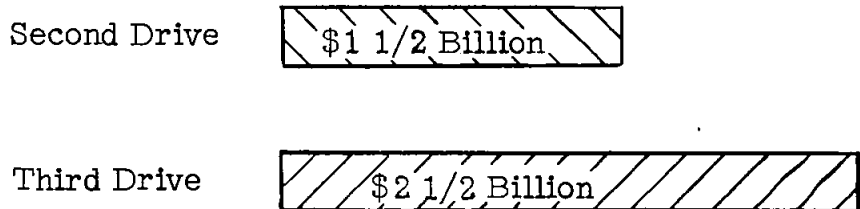
\*This motivational force is personal solicitation.

IN THE THIRD BOND DRIVE  
THE TREASURY DEPARTMENT, BY EMPHASIZING  
PERSONAL SOLICITATION AND DOUBLING THE NUMBER  
OF POTENTIAL BUYERS WHO WERE ASKED TO BUY,  
ACHIEVED A 70% INCREASE IN SERIES 'E' BONDS SOLD

Proportion of Potential Buyers



The results in terms of dollar volume of Series E bonds sold were as follows:



Sources: An Appraisal of the Second War Loan Drive, The Division of Program Surveys, U.S. Department of Agriculture, June, 1943.

An Appraisal of the Third War Loan Drive, The Division of Program Surveys, U.S. Department of Agriculture, October, 1943.

CAN RESEARCH RESULTS BE USED TO IMPROVE  
STAFF PERFORMANCE?

In a study contrasting very successful with mediocre life insurance agencies, the following are some of the differences that were obtained in the way the agents commented about their manager's attitude toward his agents and treatment of them:

Manager's Attitude	Percentage of agents mentioning that their manager displays this behavior in:		
	<u>Very Successful Agencies</u>	<u>Mediocre Agencies</u>	<u>Difference</u>
Unselfish in dealing with agents	100%	26%	74%
Cooperative with agents	92	35	57
Interested in agents' success	100	54	46
Sincere in dealing with agents	91	55	36
Fair and just to all agents	67	48	19
Honest in business dealings	92	85	7

These and related results when applied by life insurance companies resulted in improvements in morale and productivity. One company that applied the results on a company-wide basis obtained a 10% increase in business in less than one year during a period when other companies were experiencing a decrease. In analyzing the situation, this company obtained evidence that led them to conclude that the bulk of this increase was due to the application of the research results.

Sources: Morale and Agency Management, Life Insurance Agency Management Association, 1940, Hartford, Connecticut.

Proceedings of Annual Meetings, Life Insurance Agency Management Association, 1938, Hartford, Connecticut.

## DOES PARTICIPATION HELP CHANGE

### ATTITUDES AND BEHAVIOR?

The chart below shows results typical of those obtained in a series of experiments with workers in a textile plant. Whenever there is a change in the method, even though slight, in which the work is done, there is usually a drop in productivity and a long period before productivity returns to normal. The effect of participation upon productivity is shown.

