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role of the representative, the effect of group size on consensual processes, the creation of obligations as political debts—these are among the phenomena which, arising from politics, deserve to be studied in more fundamental theoretical perspective. Especially if political science should place its main emphasis on governmental decisions, rather than trying to encompass all decisions in all social systems, this work will have to be done by the other social sciences (17). Sometimes the enrichment that comes from a new practical problem may be shared by political science and other theoretical sciences; this seems to have been particularly true of the rapidly increasing concern with the politics, sociology, and anthropology of the “new nations.” At still other times, problems that are largely political may require specialists to know a great deal of detail about another technical discipline, as in the case of the politics of arms control or of population control.

A second advantage of an applied political science that evaluates its own activities is that it permits the scientific approach to be combined with philosophy in a single discipline. This combination has occurred to some extent in philosophy, but it may produce interesting results in political science as well. Even though ethical propositions cannot be deduced directly from propositions of fact, nevertheless certain aspects of scientific method may be profitably transferred to ethical discourse. The statement of general principles so that their specific implications are clear, and the organization of these general principles so that these specific implications do not contradict one another, are aspects of scientific theory formation that might well be applied to ethics. To do so in political ethics, or in ethics in general, might limit ethical debate to the comparison of precise and internally consistent positions or “ethical axioms” (18). Though we could hardly expect such procedures to solve ethical problems immediately, they might remove self-contradictory moral positions from the field, and lend a certain special status to those positions that remain, making them more clearly worthy of discussion in universities.

A third advantage of considering political science as an applied science is that this permits and encourages the bridging of certain academic and cultural gaps. Snow has called attention to a cultural bifurcation between scientists and literary intellectuals, which has been accentuated by the development of science and technology (19). The modern academic world contains gaps like those among nations, and it is no less important that these be bridged.

In bridging these gaps, political science has an important part to play. It can combine philosophic studies of valuative questions with scientific research, study of the present with historical concern for the past, scientific studies of the behavior of large numbers of persons with more intuitive studies of key individuals, and concern for relatively specific applied problems with interest in more general theoretical ones. To combine the polar opposites of each pair would contribute a great deal to bridging gaps in a fragmented intellectual world. If political science can rise to this challenge, it may thereby encourage a broader perspective on the part of other academic disciplines, and contribute to the application of rationality to important problems.

NOTES ON SOCIOLOGY IN THE U.S.S.R.

ROBERT K. MERTON AND HENRY W. RIECKEN

AFTER about two years of negotiation, the National Academy of Sciences arranged, in May 1961, for the first “official mission” of behavioral scientists to the Academy of Sciences of the U.S.S.R. The American delegation was composed of six psychologists, a psychiatrist, an anthropologist, and two sociologists (20). The itinerary included the principal research institutes and university departments concerned with the behavioral sciences at Moscow, Leningrad, Tashkent, Tbilisi, and Kiev.

The broad purposes of the tour were to establish or reinforce intellectual relations with Soviet colleagues and to identify major trends in the behavioral sciences, especially emerging developments not yet reflected in Soviet publications. We focus here only on Soviet sociology, saying nothing about collateral developments in psychology, psychiatry, and anthropology. Even so, this report must remain little more than a set of impressions of trends now emerging in sociological research rather than a detailed account of any one of them.

We were met with goodwill and great hospitality in every one of the centers visited. With occasional exception, due to illness or absence from the city, we were able to see most of the people we wanted to see, as well as their places of work. Our hosts in the several cities were generous of their time and welcomed us graciously. The fact is that most of us returned with the uneasy thought that we Americans would be hard put to it to respond with as much generous hospitality should a Soviet delegation come our way.

As it happened, the tour could scarcely have been

better timed. For one thing, it coincided with a major change in the administration of Soviet science, designed to increase the direction and coordination of all basic research in the physical, life, and social sciences by the Academy of Sciences. For another thing, this was the time in which various steps were being taken to extend and to diversify the work going forward in sociological research.

We soon found that the character of Soviet sociology can be understood only if it is seen as part of the distinctive organization of science altogether in the Soviet Union. After all, only the established substance and methods of science are trans-cultural; the organization of scientific work tends to differ according to the social, political, and economic structure in which it is found. To Academician Fedoseyev, for example, the dispersed, varied, and uncentralized character of sociological research in the United States seemed like little more than "planned anarchy." This he contrasted with centrally planned programs of research in the U.S.S.R., adding that even there, too much "anarchy" existed inasmuch as too many research centers were working on the same problems and so, presumably, needlessly duplicating research at the expense of assumed efficiency.

The ultimate direction of sociological research in the Soviet Union is, like that of the other sciences, centered in the Academy of Sciences. The explicit objective of the Academy is, through its scientific work, to "participate actively in the building of a communistic society in the U.S.S.R., to help defend the socialist victories of the workers, and to strengthen world peace." At least on the level of ideology, then, even basic science is construed as having utility for social and political purposes, and, as we shall see, the social sciences have an especially important role.

The eight divisions of the Academy includes one devoted to "economics, philosophy, and legal studies." It is in this division that Soviet sociology is principally lodged. More specifically, the center of sociological work is in the Institute of Philosophy at Moscow, which is under the direction of Academician P. N. Fedoseyev (one of the 174 high-ranking academicians in the U.S.S.R.). Thus, sociology has its place primarily in the prestigious "Big Academy"—as the 240-year-old Academy of Sciences is described in the vernacular—rather than in the "Little Academy," the 15-year-old Academy of Pedagogical Sciences, in which the greater part of psychology is located. The reason for this has nothing to do with any invidious comparison of the scientific status of sociology and psychology. Rather,

it is the result of the fact that Soviet sociology has long been and still is conceived as a part of Marxism-Leninism, as a part, that is, of the philosophy of science that officially obtains in the U.S.S.R.

The organization of sociological research, like that of scientific research generally, provides for its being conducted primarily in institutes under the aegis of the Academy rather than in the departments of universities. In a way, the Soviet system reverses the sequence in which sociological research developed in this country. With us, of course, this research began and still continues to be done largely in university departments, with research institutes emerging in steadily increasing numbers only during the last generation. In the Soviet Union, the research institute, with its complement of full-time research workers, is the major form for sociological investigation, although efforts are now under way to enlarge the research activities of university departments. Indicative of the origins of Soviet sociology in Marxist philosophy is the fact that there is, as yet, no institute exclusively devoted to empirical research in sociology. Instead, a section of the Institute of Philosophy and, as we shall presently see, newly-formed "laboratories" attached to the major universities and Academies, provide the framework for sociological research. Not even the great new Lomonosov University at Moscow, completed in 1953, yet provides for substantial research in empirical sociology.

Having mentioned the new university at Moscow, with its massive complex of 37 buildings dominated by a 32-story, 800-foot-high, skyscraper on the Lenin Hills, we should avoid the misleading impression of ample physical facilities for research. As with research institutes generally in the U.S.S.R., the research groups in sociology are housed in crowded and substandard buildings, if judged by American standards. But this seems only to reflect the endemic problem of inadequate housing in the U.S.S.R. It is a little like the situation confronted by the early research bureaus and institutes of sociology in American universities which were and, in some cases, still are housed in archaic buildings that have been abandoned by their older siblings in the academic family. Indeed, the Soviet sociologists are in a way somewhat less "relatively deprived" than we, since even the research institutes in the physical and life sciences are often located in obsolete buildings.

Perhaps the most fateful transition to the near future of sociology in the U.S.S.R. is registered in the current debates on the connection between historical materialism and sociology. As everyone knows, the two have been regarded as virtually

identical, with the formulations of Marx and Lenin providing the basic and inclusive theory. This has been true of sociology in a sense in which, all public pronouncements aside, it has not been true in the other sciences where fidelity to dialectical materialism is also affirmed. The difference is one between conformance to a doctrine that genuinely affects the structure of inquiry and the mere facade of ceremonial re-affirmations.

Lately, the question has begun to be raised whether it is possible to distinguish fruitfully between historical materialism and empirical sociology. In one far from dominant view, historical materialism provides the general theoretical orientation as the philosophy basic to sociology. But it is distinguished from the types of inquiry that comprise "concrete sociological investigation." The two are regarded as compatible, of course, but as nevertheless different. General Marxist doctrine cannot provide the detailed empirical results that can be obtained only from "concrete" sociological inquiry.

The current line of thought is perhaps best indicated in the following extracts from a review of a monographic study, "Upsurge in the Cultural-Technical Level of the Soviet Working Class" based on work conducted in the Sverdlovsk *Sovmarkhoz* (21). The reviewers comment on the role of social science:

... there is a part which must be played by specific social research, which serves the purpose of enriching historical materialism with modern data. It also provides, for the sphere of theoretical analysis, the vast treasury of actual vital processes which demonstrate the achievement of the second stage in communist society. The specific aspect of this research is seen in the fact that the scientific workers begin with facts and data obtained from true "primary sources," from direct study of the lives of workers, kolkhoz members and the intelligentsia, from conversation with actual persons, from questionnaires, polls, and every sort of research, from the documents of enterprises, kolkhozes and establishments, and from the analysis of the work of Party, trade union, Komsomol and other organizations. In our view, this is one of the most fruitful trends in the development of social science. It has not emerged accidentally, but arose from two factors.

The social sciences, according to the program of the CPSU, 'Constitute the scientific foundation for the guidance of the development of society.' How can they serve this function if they do not utilize the practical experience achieved in the construction of communism, if they do not reach deep into every pore of the public organism, if they do not perfect the methods for generalizing social phenomena for application to objective social processes? The new factors, the visible characteristics of communism, do not as a rule appear in the peaceful atmosphere of research offices, but rather in

the life of the people themselves, in the creative work of the broad masses of the working people. It is necessary to interpret these new phenomena, to help shape them, and to ensure the optimum conditions for their further development. It is for this reason that there is an objective necessity for detailed study of the various aspects of socialist reality, the emergence of communist elements in it, etc.—concrete social analysis.

The second factor which leads Marxist sociologists into specific sociological research is seen in the fact that we live in times which were foreseen by the founders of scientific communism only theoretically and in general terms. The later works of V. I. Lenin contained a concrete plan for the building of socialism in our country. The theoretical legacy left by Marx, Engels and Lenin will always remain as an inexhaustible treasury of ideas and as a basis for the further development of the study and teaching of socialism and communism. At the same time, it is quite evident that the great teachers of the workers' class could not foretell in detail the peculiarities in the development of socialism and the transition to communism. They could not provide specific instructions to those directly involved in the construction of communism on all problems. Soviet sociologists must serve as the pillars in the vast work of theoretically summarizing the progress made in the growth of socialism into communism currently by the Party and its Leninist Central Committee. On the basis of the factual material obtained, bold new theories must be formulated, laws heretofore unknown must be clarified, and practical recommendations must be made.

In summarizing their point of view, the reviewers put the matter very succinctly:

As rapidly as possible, the social sciences must be made the scientific basis for the guidance of society's development (and in this connection, a special role must be allocated to specific social research). Concrete sociological research must be done such as to serve the purposes of the tasks set forth by the state for the planning organs which regulate the complex mechanism of social life.

However the debate about the role of historical materialism actually turns out, there is plainly a developing tendency in the U.S.S.R. to assign an ever greater role to what is described as "concrete sociological investigation," as distinguished from "general sociological problems" or the effort to synthesize the social sciences in a single philosophy. This latter effort is closely linked with studies of "laws of historical development," particularly with reference to the development of socialist societies. Although this type of historical inquiry continues to engage much of the attention of Soviet sociologists, its main character is sufficiently known not to require further discussion here. Instead, we confine our report to current work in "concrete sociological investigation" which refers, in the main, to field studies, based on observation, interviews of diverse types, questionnaires, and social statistics.

During the course of our stay in the U.S.S.R., we encountered dramatic evidence of this newly-enlarged interest in developing empirical research in sociology. It was almost as though we were witnessing a process of change in midstream. In the capital, the section of the Institute of Philosophy at Moscow devoted to sociological research has been engaged in "concrete" (empirical) investigation for some years. As we moved from this center to the University at Leningrad, we met Dr. V. A. Yadov, director of the "Laboratory of Social Measurement," comprised of five research workers and their assistants. This Laboratory had been established about three or four months before. Two weeks later, when we visited the University at Kiev, we found a "Laboratory of Concrete Sociological Investigation," still so new that it had yet to have a Director although it had a provisional staff of seven scientific workers. When we asked how it was that these laboratories for empirical research happened to be springing up almost simultaneously, we evidently betrayed our fundamental ignorance about the workings of centrally planned scientific investigation in the U.S.S.R. We were told, directly enough, that these laboratories, and others like them, were being established as a result of a decision made in the Academy of Sciences to extend and deepen concrete sociological studies.

Another sign of the comparative recency of this development is that these new research units are staffed by new men. The members of the research staffs are almost uniformly young: for the most part, men and women in their twenties and early thirties. Professor Osipov, who heads the section on sociological research in the Moscow Institute, is in his early thirties and, except for one associate who specializes in the sociology of economics, is clearly the "old man" of his research group.

Evident though it is that interest in empirical sociological research is growing in the U.S.S.R., we were not able to get any firm estimate of the scale on which it is being conducted or planned. We do not even have any estimate of the number of sociologists at work in the Soviet Union. The Association of Soviet Sociologists was established a few years ago and, very shortly now, it will begin to publish the first quarterly in the U.S.S.R. devoted entirely to sociological studies. (This, we were told, will be available in English.) But since membership in the Association is by research-units, not by individuals, this does not help gauge the population of sociologists. Judging from the comparatively small numbers making up the research cadres—these ranged from four or five to thirty or so—we do know that it does not compare in size with the

approximately 6,000 associates, active members, and Fellows of the American Sociological Association. Presumably, Soviet sociologists would be counted, at the most, in the hundreds rather than the thousands. Numbers are of course not all, but neither are they nothing. Since there seem to be no plans greatly to increase the supply of sociologists in the U.S.S.R., this means that the scale and intensity of research there will not greatly change during the time just ahead.

As earlier remarks have implied, empirical studies in Soviet sociology are grounded in a strong commitment to practical application. The broad outlines of research programs and particular research problems are laid out as part of the Academy plan and these are almost entirely connected with practical difficulties. The concept that Soviet sociologists have of their proper sphere of work is illustrated by the observation on basic and applied research made by the young director of the Laboratory of Social Measurement at Leningrad. He took it as self-evident that empirical research is (and should be) concerned first with the most pressing problems of the society. When asked about the *possibility* of basic social research, of inquiry conducted simply for the sake of advancing knowledge, he replied that such research would be possible but that he and his staff would feel acutely dissatisfied if their research were not directed toward visibly useful ends, i.e., toward the amelioration of practical problems.

Much the same applied orientation, linked with the distinctive organization of Soviet science, was expressed at the Institute of Pedagogy in Kiev, where a research worker said: "Our Ministry (of Education) requires us, as we believe is correct, that we make the results of our research practical. For example, we must find out how learning can be combined with work or how to improve the capacity for original thought. The Ministry often criticizes us for not arriving at sufficiently practical results, and this stimulates us to further work."

Against this background, we can understand that one of the questions most often asked us about American sociology was this: "What use is made of research results in sociology?"

The Soviet orientation toward empirical social research might be described as "practical empiricism": as an effort to obtain just enough systematic information on which to base recommendations for policy and action, with little interest in pursuing, through empirical research, the more theoretical implications of what has been observed. In spirit and outcome, it is most like market-research in the United States: on a low level of ab-

straction, and largely confined to ferreting out facts that can be taken into account in making practical decisions.

At present, the range of practical problems attacked by sociological investigation is mostly limited to problems connected with industrial work and education. The many specific examples of research under way or just completed can almost all be encompassed under the single heading: the engineering of social change.

The major emphasis placed upon investigations designed to find ways of "eliminating the differences between mental and manual work," is, of course, in direct line of continuity with one of Marx's principal themes that only under the distinctive kind of freedom that will be found in communist society and "only in association with others, has each individual the means of cultivating his talents in all directions." Since the differences between manual and mental workers in the U.S.S.R. have not been erased, this becomes a prime target for research. The elimination of these differences can be rephrased either as an attempt to increase the rate of upward social mobility or, more prevalently, as an attempt to upgrade the skills and abilities of manual workers. Immediate interest in this aim comes from long-range plans developed by the Council of People's Economy to increase the efficiency of labor through mechanization and automation. Such developments require heightened levels of worker qualifications. Sociologists therefore study current levels of education among workers and help design on-the-job training and evening-school educational programs. A good deal of research is devoted to somewhat elementary and practical questions revolving around the nature of the obstacles that restrain workers from seeking and getting more education.

Along these same lines, various time-budget studies of workers have been begun, not unlike the studies by Sorokin in this country in the early 1930's. Workers are asked to keep track of how they spend their time and record this (by five-minute intervals) in such categories as: work-time, household duties (e.g., shopping and preparation of meals), physiological needs, transportation, rest, time spent with children, and "socially useful work" (including participation in civic councils, workers' courts, attending lectures, or doing "mass cultural work"). The analysis of these time budgets has at least two aims: to identify and then to eliminate simple problems of scheduling and to guide the formulation of plans to change the activities of workers.

A few examples of such uses will bring out, as

well as anything, the practical nature of much of Soviet sociological research. As examples of the first kind of use, it has been found that one obstacle to evening-school education for workers was that examinations were so scheduled that more workers had to be released from jobs, for preparation and examination, than could be spared. (This problem was solved by staggering the times of examinations.) Or again, it was found that most workers watch television in the evening and that they also want more education. This led to changes in the scheduling of educational programs on television so that they would appear at prime time convenient for workers. As an example of the second kind of use, the time-budget data were linked with inquiries into worker-motivations to conclude that younger members of the work force could be counted on to study more and to be "more active in raising the efficiency of labor." Or again, we were told that recent studies have shown that the multiple participation of workers in various sectors of social life—the acquiring of multiple work-skills, serving as deputies in local councils, etc.—improved their health as well as their sense of social well-being.

These examples may bring out the comparative simplicity and directness of application of much of empirical research in Soviet sociology, but they do not tell the whole story. There is also a good deal of interest in the effectiveness of various types of incentives for work, a problem that is seen not to be peculiar to any one economic and social system. There are studies of man-machine relations, of the formation of moral character (especially with regard to the development of "responsibility and self-discipline"), of the use of leisure-time (especially in relation to increased automation), in job-enlargement through diversifying workers' skills and tasks, and in selected demographic problems, including patterns of migration, urban population trends, and human fertility. Among social psychologists, there is great interest in studies of "the collective" (the formally organized group together with its informal, unprescribed patterns of behavior) and the use of the collective in the socialization of children.

The study of children's groups illustrates one pattern of close relation between research and application. Certain experiments in self-perception and self-evaluation have the double objective of *finding out* how changes in self-evaluation occur and also of *teaching the subjects* in the experiment to evaluate their performance "correctly." A social psychologist may function as both a diagnostician and a counselor who takes advantage of "natural experiments" (in a classroom, for example) to gain

insight into how the collective can deal effectively with deviant behavior; and also to assist the teacher and the pupils to develop a plan and a strategy for controlling a member of the class who is not behaving responsibly or who is at odds with the purposes of the collective. Some studies along these lines in Kiev were concerned with linking the motivations of deviant children to newly-fashioned social roles that would enable them to perform in ways valued by the rest of the group who would then simultaneously reward the one-time deviant and be themselves prepared to re-incorporate him into the group. The researchers knew of Piaget's work, but not George Mead's. It was from Marx that they derived the idea that to evaluate oneself correctly, one looks at other people as in a mirror.

In the matter of sociological *theory*, the Soviet sociologists we met were most concerned to distinguish their authentic Marxist theory from the dubious theories of "bourgeois sociology." These discussions had a distinctly polemical tone. But in the matter of *methods* of empirical research, they were positively though selectively oriented toward American sociology.

The new cadres of sociological researchers are for the most part self-taught (as is of course inevitable when fresh beginnings are being made). There are no formal courses on methods of research in Soviet universities, although one is scheduled for Leningrad next year. The young sociologists have studied the American textbooks on methods of investigation and pay attention to methodological material in our journals. A few expressed an interest in applications of mathematics to sociology, an interest stimulated in part by the translation into Russian of *Mathematical Thinking in the Social Sciences*. But, as we have intimated, the procedures actually used in the collection and analysis of data tend to be like those current in American sociology, a generation or so ago.

In addition to the use of time-budgets concrete sociology makes some use of questionnaires, with fixed alternative questions. We were told, however, that this technique is "too mechanistic." Great effort is therefore devoted to open-ended collection of data. Documents of various kinds are collected to supplement statistical data: life-histories, essays on "decisive moments" (turning-points) in people's lives, and "self-analyses" which try to report the impact of external events upon inner feelings being among the most common. Individual interviews are often conducted by members of the groups under study—for example, by engineers in industrial plants who interview the workers "they know well."

One distinctive procedure is the "mass-inter-

view," often used in factories to elicit workers' opinions about their jobs and their lives in the factory. The procedure reflects and makes use of the common Soviet pattern of mass-meetings. Typically, the mass-interview involves the assembling of from 500 to 1,000 workers to listen to a talk by an engineer, technician, or scientist about a topic of major concern—such as methods of increasing the productivity of labor or problems of automation. This is followed by a discussion from the floor in which workers debate the points made in the talk and advance ideas of their own. Sociologists take note of the attitudes and opinions expressed in this way and later incorporate some of these in research-questionnaires. On occasion, workers taking part in these discussions are privately interviewed to elicit more thorough expression of attitudes and ideas.

It is significant that studies of public opinion should have been initiated altogether. This is only one of several signs that practical interests are beginning to lead to types of social research that had no place at all in Soviet society until now. There is, for example, the faint beginning of consumer preference research, now that somewhat more consumption goods are being produced and some measure of consumer choice can begin to operate. It is also revealing of the ways in which social and political contexts shape emerging social research that the first "Institute of Public Opinion" should have been established, not by academic groups either in the institutes or the universities, but by the *Komsomol* (the Young Communist League) which is now beginning to be advised by sociologists in the Academy.

In polling as well as in other work it seems to us that comparatively little attention is given to matters of sampling. Every now and then, an effort is made to use stratified sampling but this seems rather less than usual. In some instances, large numbers of cases, however collected, are treated as though they were representative of a defined universe. This can be illustrated by the much-publicized public opinion poll of Soviet youth conducted in January 1961, by the aforementioned Institute of Public Opinion. It consisted of twelve, mostly open-ended, questions printed in and addressed to readers of the *Komsomol* newspaper who were asked to reply within three weeks (22). It resulted in about 20,000 letters, geared to the questions, which were then classified and counted. No concern was expressed about the representativeness of the replies, although the regional, educational, and occupational composition of those answering was reported. The analysis consisted of a count and an unre-

strained ideological interpretation of the coded qualitative replies. Respondents were applauded, condemned, and satirized. Nor was there any evident concern with the anonymity of respondents; many replies were signed and the published account of the poll referred often to the views expressed by identified participants in the poll. Nothing was said of the possibility of self-selection of respondents. This possibility was apparently taken as insignificant inasmuch as there was a variety of reported opinions, experiences, and aspirations.

Soviet sociology makes little use of sociometric methods, even though many observations by Marx would seem to provide a rationale for these methods of inquiry. After all, Marx often alluded to the different types of social relations that form among people under different conditions of work. He contrasted, for example, the ecological situation of workers in large-scale industry with the "small-holding peasants (who) form a vast mass, the members of which live in similar conditions but without entering into manifold relations with one another. Their mode of production isolates them from one another instead of bringing them into mutual interaction. . . ." And, to be sure, whether in the center of things sociological in Moscow or in the outlying republic of Georgia, we were told that the "social organization of work" will of course greatly affect productivity. But when we asked about empirical inquiries into the problem—for example, the formation of informal groups—we were told of no empirical work of the kind that is familiar to us on the formation of groups and levels of productivity. The orientation to practical empiricism apparently leads to efforts to detect modes of formal organization that may improve productivity with little attention being given to the more subtle, less immediately visible and unplanned formation of groups, with their indirect consequences for both productivity and worker-satisfaction. But since some approximations to sociometric measures are beginning to appear in Soviet sociology and since a foundation for their use can be identified in the writings of Marx, it is our guess that the use of sociometry will become more frequent.

There are also small beginnings in the use of panel-interviews; for example, in the study of attitudes and experiences of workers in Gorki, based upon interviews repeated at intervals of three months.

As we have noted, ideological overtones are most audible when it comes to discussions of sociological theory. But even empirical research which must, after all, include conceptual categories is not devoid of ideological implications. For example, empirical

research has required unobtrusive but definite recognition of differences of status in Soviet society that are not in strict accord with prevailing Soviet doctrine. For the purposes of sociological analysis, it becomes necessary to differentiate among the working class as a whole, even though official doctrine affirms that there are, in Soviet society, just the two classes of workers and peasants as well as a "social stratum," the intelligentsia, drawn from these two classes. When we asked how researchers on workers distinguished between *strata*—not, of course, "classes"—we were promptly told that six distinct strata have been identified, depending primarily upon the relations of workers to the degree and kind of mechanized work, and ranging from unskilled manual labor to the operation of complex equipment. As this example may illustrate, it is not so much that research sociologists in the Soviet Union must walk the tightrope of official doctrine as it is a matter of so formulating their working concepts and procedures of inquiry as not to be explicitly at odds with received doctrine. Various components of social research are comparatively, not entirely, free of ideological connotations and it is therefore on the plane of method, rather than the plane of substantive theory, that Soviet sociologists seem most receptive to developments in Western sociology.

Even more than the *methods for collecting* sociological data, the *methods of analyzing* the data seem in their early stages. For example, the specimens of sociological research reported to us seldom make use of multivariate analysis. Instead, they are confined almost entirely to reports of simple distributions, which generally seem regarded as a sufficient basis for arriving at ideas for practical application. At times, multivariate and comparative analyses are defined as simply irrelevant. At Tbilisi, for example, the center of the sociological research being done in Georgia, sociologists and psychologists are engaged in studying the flow of peasants and of women into the industrial work force. (Some 40 percent of the industrial workers in Georgia are reported to be women, engaged mostly in light industry.) When we asked whether comparisons had been made of the women who do and those who do not enter the work force, the question was regarded as superfluous. After all, we were told, Georgia now stands first in the world with regard to the proportion of its population enjoying higher education. Partly as a result of this education, Georgian women are motivated to contribute to the development of the socialist state, whatever their material situation. They want to contribute to "socially necessary labor." Consequently, more and

more of them enter the work force. When we noted that not all Georgian women do in fact go to work in the factories and that this raises the interesting question of what distinguishes those who do from those who don't, we were told, almost as though the question were indelicate, that "the problem does not arise in this way in the U.S.S.R. and so we do not think it necessary to put the question."

The degree of detail in analyzing sociological problems appears to be hedged in by official doctrine, value-orientations, and received convictions to a degree which seems scarcely recognized by the research workers themselves. To some extent, this affects their orientation to methods of analyzing empirical data. Multivariate analysis becomes simply irrelevant when practical empiricism calls only for identifying broad aggregates of people who behave in distinctive ways, and when sociological research is conceived as primarily the handmaiden of programmed social action. Yet, once again, and without essaying the dubious role of prophets, we are inclined to believe that as empirical research develops in Soviet sociology, there will occur a growing convergence between at least the methods developed in the U.S.S.R. and in the United States.

SOCIAL STATISTICS AND THE PREDICTION OF HUMAN BEHAVIOR

FREDERICK F. STEPHAN

A.A.S. Section K symbolizes the importance of collaboration between social scientists and biological and physical scientists in our world of accelerating change and progress, of overwhelming problems and need. It has been claimed that "science has altered the conditions of human existence more radically than anything that has happened in thousands of years past." However, it is not the speeding up of change in the conditions of our existence but the direction in which these changes are carrying us that is the paramount concern of the world today. In place of the nineteenth-century idea of inevitable progress, though it is perpetuated in Marxist ideology, the dominant idea today is of global disaster.

Some months ago I attended a conference devoted to the difficulties of containing the "population explosion." Immediately thereafter I went to a conference on the obstacles to disarmament. It was very difficult to make the mental shift from the runaway growth of the world's population to the prospect of its annihilation, but there was a common theme of mankind rushing headlong to its

destruction. Oddly enough, both versions of doomsday are in substantial part consequences of scientific advances, though we must hasten to add that scientists, like Pandora, did not plan it that way.

As social scientists, our part in the division of scientific labor is to seek an understanding of human beings and their behavior. As a consequence of the changes in the conditions of human existence recently wrought by scientific advances in the understanding of the physical world and of life processes, the improvement of our understanding of the behavior of individuals, communities, nations, and international relationships has become by all odds the most important objective for science today. It can only be wished that we were better prepared and farther along in the attainment of this top-priority goal.

Recently, a commission appointed by President Eisenhower published a comprehensive statement of goals for the United States and the American people. It included a chapter on goals for science and gave three reasons why citizens should be informed about science and should understand its true nature and purpose. The first reason was: "Science is now so heavily involved in many of the most difficult and important social and political problems (testing of nuclear weapons and control of space; dangerous adulteration of air, soil, plants, and food; radiation and genetics; population growth and resources, etc.) that these problems simply cannot be approached wisely or effectively without a reasonable understanding of the scientific aspects. And these problems, in a democracy, must be the concern of the citizens." Surely this is a convincing argument for public understanding of the high intellectual purposes that lead scientists to pursue knowledge no matter what the hazards. Yet we may wonder whether, in his broader view of the situation, a citizen may not picture this quest as a foolhardy and inhuman sport and seek to put an end to it. Whatever the public reaction may be, we may also wonder whether these social and political entanglements of science would not be eliminated, or at least greatly reduced, if the questions of human behavior involved in them could be understood and controlled.

It is not nuclear weapons alone but also the developing conflicts and possible decisions to hurl these weapons at enemy populations that make nuclear testing and atomic warfare perhaps the major problems of our time for citizens and scientists. It is not the biology of population growth but human behavior in preventing deaths without simultaneously controlling reproduction that makes the population explosion another major problem of