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THE PRESENT CONDITION OF THE SOCIAL SCIENCES[1]

A NEW world is being born. Out of the chaos and the conflict of the present it seems certain that great social changes are bound to emerge. At the birth of this new social world it is the social sciences, not the physical, which must preside. Yet we who are interested in the development of the social sciences must candidly ask ourselves how far they are fitted to assist in the birth of a new social world. How far are they fitted to lead and to guide in the work of social reconstruction which must follow the World War? Do they command such general respect and confidence that the masses will turn to them for guidance to avoid the mistakes of the past and to make secure the foundations for a worthy civilization in the future? Are their leaders so united on fundamentals that, though they may differ regarding minor details, yet they substantially agree on the general direction which reconstruction in our political, economic, educational, domestic and general social life should take? Can, in brief, the social sciences present such an accurate body of information and of generalizations from facts that in this crisis sane men will turn to them voluntarily for guidance, much as they would to the physical sciences if any one were called upon to build a bridge?

Such questions as these are of more than merely academic significance. Germany has taught the world in this war the value and the possibilities of social organization;

[1] An address before the local chapter at the University of Missouri of Alpha Zeta Pi, a society for encouraging scholarship and research in the social sciences.

and organization is destined to be a watchword of the future, whatever the outcome of this war. Organization of our political, economic, educational and general social life will be tried on a scale never before attempted, at least in English-speaking countries. Will the organization attempted be wise or otherwise? Wise social organization is evidently what we need, but it can not be successfully accomplished without scientific knowledge of our social life. Are we, then, as students of the social sciences prepared to give reliable scientific guidance in every field of social activity? Or have we only conflicting opinions to offer? We should face such questions as these candidly. The watchword of the present is "national service." Are we fully prepared to do our "bit" in the work of social reconstruction which our national welfare and security in the future demand? That, for us who are engaged in scientific and educational work along social lines, is a more important question than whether we are ready to do our "bit" in the war itself; for whether this war will prove to be a great victory for humanity and civilization will be evident, not upon the announcement of the terms of peace, but a generation or two thereafter.

What, then, are the social sciences ready to do for civilization?

The editor of *The Scientific Monthly*, in commenting on the papers presented before the Section for Social and Economic Science of the American Association for the Advancement of Science in the year 1915, published in the April, 1916, issue of that journal, said:

> An obvious difference exists between the eleven sections of the American Association devoted to the natural sciences and the one devoted to the social and economic sciences. The former are in the main concerned with the discovery of truth, the latter in the main with the expression of opinion.

While the work of the Social and Economic Section of the American Association may, perhaps, justly be held to be not representative of the best work in the social sciences, yet the general justice of this implied criticism of the social sciences can not be doubted. In spite of the labors of many eminent minds, in the main the social sciences, especially those of a theoretical nature, do remain still to-day in the realm of opinion rather than in the realm of accurate and verified truth. This is shown by the fact that not infrequently even in academic circles they are developed in the service of fads, social, political, metaphysical and methodological. This was once supposed not to be true of the older social sciences, such as economics and politics, but in the light of recent events it would be a very rash man who would affirm that even these older sciences have yet passed from the stage of opinion to that of verified scientific knowledge. It may possibly be said that when the whole world is in a condition of confusion and revolution, it is too much to expect that the social sciences will not also reflect this condition. But science is supposed to be something which, aiming as it does at the discovery of objective, verifiable knowledge, transcends the mere *Zeitgeist*. Besides, if the social sciences are in a state of confusion, the world can scarcely be expected to look to them to lead it out of its present confusion into a new and better day of peace, harmony and agreement as to the fundamentals of human living. It is true that the disagreements among the more carefully trained scientific social thinkers are much less than what the public suppose; but it is useless to deny that there are disagreements of the most fundamental sort, and that the social sciences suffer, as well as the world, from such disagreements. Of course, the lateness of their development and the complexity of the subject-matter with which they deal ex-

plains much of their unsettled condition and of the lack of harmony among their devotees. Nevertheless, this does not explain all. There are other conditions which explain the present backwardness of the social sciences, which are more remediable, and which it should be the object of this society to aid in removing. It is the purpose of this paper to point these out, and I believe that the chief among them is the failure of the leaders of the social sciences to develop an adequate, sound and generally accepted scientific method. Scientific method may not be very important in the laboratory sciences where mechanical instruments of precision often take the place of methods of reasoning; but in the social sciences "a sound method is alone competent to the uniform and constant discrimination of truth from error." As has been well said, what the microscope is to biology, or the telescope to astronomy, that a sound scientific method is to the social sciences. In other words, the tendency toward methodological "fads" or one-sidedness is one of the most serious impediments to the development of the social sciences, and at the same time one most easily removable.

What, then, may be regarded as a sound and adequate method for the social sciences? My thesis is that such a method must be an extension and an adaptation of the methods employed by the so-called natural sciences. If it be objected that this means materialism or at least "mechanistic interpretation" in the social sciences, the reply is that this is a mistake. Science builds itself upon no universal, *a priori* hypothesis. People who try to make it do so are imbued with the metaphysical rather than with the scientific spirit. The spirit and the method of all true science is matter-of-fact, inductive and pragmatic, not deductive and dogmatic. It takes the world as it finds it, correcting common sense only as it is shown to be in error. It explains phenomena, not by reference to some universal abstract principle, such as mechanical causation, but by describing fully all the conditions essential to their appearance. But this is exactly what the social sciences do also. They also seek to explain the phenomena with which they deal by observing and describing all the conditions which seem to be in any way connected with their appearance. Science is therefore one, even though reality may be complex; and the same general spirit pervades all science, even though different methods of investigation and research have to be developed and applied in different realms of phenomena. Moreover, inasmuch as the universe is interdependent in all its parts and forms a working unity, it follows, as Comte long ago pointed out, and as every worker in the natural sciences practically acknowledges, that the more complex sciences are dependent upon the less complex, and the more specialized upon the more general.

An immediate corollary from these conclusions is that the social sciences should preserve the point of view and utilize the results of the natural sciences; that is, they should preserve the same matter-of-fact method and build themselves upon the antecedent sciences as their basis. This is in no sense to surrender the inductive spirit of science. The inductive spirit is behind all science, and when a worker in a more complex science borrows a principle or a truth from a simpler science and applies it in his own field, he is not thereby giving up the inductive spirit of science, even though for the time being he is working deductively. For there is no reason why a student of society should have to work out for himself independently truths which have already been discovered through inductive processes by investigators in other realms. The true inductive spirit is not opposed to the proper use of deduction. What passes for induction in the social sciences—the

mere gathering and amassing of facts—is often but superficiality under another name. If there is any hope of the social sciences getting beyond the stage of mere socially approved opinions, and of coming to substantial agreement on fundamental issues, it must be through basing themselves upon the established results of antecedent sciences, particularly of biology and psychology. Yet the natural-science point of view is largely lacking in much of the literature of the social sciences to-day. Many of their devotees seem to think that the world of human society, of social phenomena, is a thing apart, to be studied and understood by itself. This is noticeable, not only in politics and in economics, but also in sociology, where for a number of years a considerable school have openly maintained that the biology and psychology of the individual have little effect upon the group or social life, and that therefore the social sciences can not base themselves upon biology and psychology. Even the most notable book published in sociology during the present year—Professor R. M. MacIver's "Community"[2]—though in many ways a remarkable book, showing both penetration and breadth of view, fails to recognize explicitly the close connection between the natural and social sciences and denies altogether that sociology should in part be based upon psychology.

But two of the social sciences at the present time may be said to have attained even to a partly adequate method if judged by the standards which have been just set forth. Both these sciences, however, are preliminary and methodological to the more theoretical and applied social sciences. They are anthropology and history. Anthropology, on account of its close connections with zoology, especially in its physical sections, has long had the point of view of the natural sciences, though for a long time its work was narrowly individualistic. The new school of social anthropologists, however, have developed a social point of view while making full use at the same time of modern psychology. The achievements and methods of this school we shall touch upon later. Suffice to say that modern anthropology has demonstrated its right to a place among the social sciences, and in its carefully worked out and highly conscious methods it is perhaps the best equipped of all of them. This explains its rapid recent advance. But dealing as it does with human origins in general and with social and cultural origins in particular, its work from any practical viewpoint must be regarded as preliminary to the other social sciences.

History, the oldest of the social sciences, has long since worked out an elaborate methodology for the critical determination of events, conditions, and institutions in the human past. But only recently has a new school of historians, led chiefly by Professor J. Harvey Robinson in this country, attempted to bring history into vital touch with the natural sciences, on the one hand, through anthropology, and with the theoretical social sciences on the other, through social psychology. From this "new history" we can expect much; but from the standpoint of the theoretical and applied social sciences history is chiefly important as a method of approach to their problems. It is, indeed, of vital importance; and I know of no surer touchstone of sanity in the social sciences than the amount of consideration which is accorded to human history. But every historian should know, what every economist, sociologist, and political scientist does know, that the historical method has not yielded the results which were once hoped from it. By itself the historical method is inadequate from the very nature of recorded human history. The historical evidence of the past is at

[2] The Macmillan Company, 1917.

best but fragmentary and fails to yield all the knowledge which we need for guidance in the complex social conditions of the present.

This perception has led to the search for, and the emphasis upon, other methods of social research and investigation. Chief among these has been statistics. Statistics has had many enthusiastic advocates as *the* method of the social sciences, both among economists and sociologists, a recent advocate going so far as to say that the statistical method bears much the same relation to the social sciences that the experimental method bears to the physical sciences.[3] There can be no doubt that statistics presents the one means of measuring social facts upon a wide scale, and so of rendering our knowledge of mass movements exact. In so far as exact measurements are needed in the social sciences (and they are needed not less than in other sciences), the statistical method must remain a highly important part of the methodology of the social sciences. It is greatly to be regretted, therefore, that as yet we possess adequate statistics of only very small sections of our social life; and it is manifestly our duty as students banded together to promote scholarship in the social sciences to do all that we can to promote the accurate collection and study of social statistics. However, apart from the fact that statistical methods have still to be enormously developed before they are susceptible of application to the general problems in the field of the social sciences, it is evident that there are many problems in political science, jurisprudence, sociology and other social sciences which by their nature are not amenable to statistical treatment. It is noteworthy, moreover, that the natural sciences have made but a subordinate use of statistics. It is true that they have other instruments of precision, but the experimental method, so far from closely resembling the statistical method, is rather mere observation under controlled conditions. It would seem, therefore, that the nearest approach to it in the social sciences would be the direct observation of social life under mentally controlled conditions. It is true that social conditions can rarely be fully controlled, but observation by trained observers can be, and the results can be checked up with the aid of the historical, comparative, and statistical methods.

A little over a dozen years ago the practical needs of social workers for more accurate and scientific knowledge of the social conditions in the communities in which they worked led to their instituting programs of social investigation which they called "social or community surveys." One of the first and most extensive of these "surveys" was the well-known "Pittsburgh Survey." A great number of these surveys have now been made in widely scattered communities, and the movement has become specialized, so that now we have surveys of different sorts, such as "health surveys," "educational surveys," "industrial surveys," "agricultural surveys," etc. It will be noted that the movement arose entirely to meet practical needs, and that there was no thought of making a contribution to scientific methods of studying the social life. At first, the movement was narrow. The "survey" was confined largely to the material aspects of the social life, such as sanitation, housing, wages, etc. Moreover, the survey was supposed to be an entirely local and community affair, and though statistical accuracy was emphasized, but little attention was paid to history and

[3] See the suggestive articles on "The Experimental Method and Sociology" by Professor F. Stuart Chapin in the February and March, 1917, issues of *The Scientific Monthly*.

comparison. How, then, does this movement, which many scientific men have doubtless looked upon as a passing fad, contain the promise and the potency of an adequate method for the social sciences? Science demands world-wide, or universal, generalizations, whereas the survey is a local or community affair.

Before answering this question it may be well to point out that social workers, though they have popularized it, were not the first to employ the "survey" method. The anthropologists may probably claim that honor. The old-time anthropologist was a laboratory or library worker, relying largely upon the reports of travellers and missionaries for his knowledge of customs and institutions. The new anthropologist is a field worker. Moreover, he works cooperatively, organizing expeditions which undertake extensive "anthropological surveys," investigating minutely the customs, institutions, ideas, beliefs, and history of the population of a given region. Such have been, for example, the Jesup North Pacific Expedition and the Torres Straits Expedition. Very valuable scientific results have come from such anthropological surveys, especially when their facts have been compared one with another.

Now this illustration shows that survey methods are not limited, that surveys properly made are of far more than local significance, and that the most valuable scientific facts and principles can be secured through the careful survey of different communities and their comparison. The survey method might, indeed, properly be called the laboratory method of the social sciences; for the world of human beings, the *community*, whether large or small, is the only possible laboratory which the social sciences can employ. Like laboratory methods in the natural sciences, this intensive study of the social life permits the isolation of phenomena and at the same time their study by a combination of methods. It is as if nature had set a great many experiments going at once in many different laboratories, and the scientific observer had only to devise adequate methods of checking up the results. It is not necessary, of course, that such inductive study should go on indefinitely for certain results, as some have claimed; on the contrary, a single accurate observation may give a clue which a comparatively small number of similar observations may suffice to establish as accurate scientific knowledge. Neither need the community which is studied by the survey method be a small, local area. It can be of any size, provided we perfect our methods of observation. Why should not the survey method be extended to the life of the whole nation? The Census Bureau, it may be said, has long undertaken such work, but not on the scale demanded by the social surveyor, much less by the scientific student of society. Moreover, social life is no longer national, but international. What is needed most of all, of course, is a survey of our whole civilization. Such a vast cooperative undertaking may, at first thought, seem fantastic; but it is surely the logical goal of the social sciences on the side of induction; and practically we surely need to know much more about the conditions of our whole civilization than we have known if rational social control over human life is to be made possible.

We are now prepared to see that the survey method is not opposed to the historical method of approaching social problems. On the contrary, the survey method includes the historical method as a necessary part. The survey must be extended in time if it is to be of scientific value. The statistical method is also evidently a part of any adequate survey work. Exact

measurement of all phenomena that can be measured is needed. The survey method is, indeed, but a name for the proper combination of all inductive methods in the scientific study of the social life. But therein lies its promise of becoming an adequate method for the social sciences of the future; for no method will be adequate in their complex field which is not synthetic. As their inductive instrument the survey method of studying social facts will not preclude the social sciences from making full use of psychology, biology and geography. For social facts could not be interpreted, as we have seen, without the use of these antecedent natural sciences; and hence any method to be fully scientific must be a synthesis of inductive results

It may be objected that the use of such a complex, synthetic method in the social sciences will be beyond the ability of ordinary minds. That I do not believe. To be sure, the level of scholarship in the social sciences will have to be raised before it can be used successfully. I am not, however, among those who believe that the present level of scholarship in the social sciences is lower than in the so-called natural sciences. I believe the contrary. But I would urge that the grave responsibility resting upon us as leaders of social thought, as well as the complexity of the problems with which we deal, demands higher standards of scholarship among us than among the students of the natural sciences. In this grave crisis of our civilization it is time that we recognize this fact. It particularly demands that we be more than mere specialists in economics or administration, in history or anthropology, in education or law; but that we have that breadth and depth of scholarship which will enable us to see on all sides of, and to the bottom of, our particular problem.

The practical difficulties, however, of employing such a comprehensive, synthetic instrument of social investigation can not be ignored. The survey method of social investigation is still very far from being developed to the point which I have described. It can not be so developed without the aid of governmental and educational agencies. It is the same with the social sciences as with all sciences, that they can not flourish without the aid and encouragement of society at large, especially through governmental and educational institutions. I believe, however, that such aid will be forthcoming if we keep our standards of scholarship sufficiently high, and work together to show the need for the development of all the social sciences.

In this crisis, therefore, let us who are students of social life close up our ranks and work together for the establishment and diffusion of that accurate social knowledge for lack of which the world seems almost on the point of perishing; for this crisis has clearly demonstrated that it is to the social sciences, not to the physical sciences, to which the world must look for its salvation. And it is upon us who are students of the social sciences that the responsibility for their future development and usefulness to humanity must rest.

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WORK OF THE NATIONAL RESEARCH COUNCIL

MAJOR R. A. MILLIKAN, vice-chairman of the National Research Council, wrote, on September 7, a letter to Dr. Cary T. Hutchinson, secretary of the Engineering Foundation, reviewing the work of the council. The letter as "edited for publication" in the *Proceedings* of the American Institute of Electrical Engineers is as follows:

The following is a statement of some of the work of the National Research Council, condensed with difficulty on account of the great variety and scope of the council's activities.