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TRENDS IN SOCIAL SCIENCE[1]

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A COMPARISON of articles in the social science journals in the United States over the past third of a century reveals many differences. These differences are in both method and subject-matter. Similar changes are shown by the books published, the programs of the annual social science association meetings, as well as the various periodic reports of research in progress. These changes have varied in the different social sciences, sociology, economics, political science and statistics. A discussion of only a few of the changes will be presented in the brief space allotted this paper. It will not be possible to present changes systematically nor to record here the considerable volume of evidence.

DIFFERENTIATION

A very useful guide to follow in observing trends in the social sciences is the lines of their differentiation. Herbert Spencer used to describe this as a process from the simple to the complex, from the homogeneous to the heterogeneous. Without accepting the universality of the principle that Spencer claimed for it, it is certainly true that in all the various social sciences much differentiation has occurred in the past quarter of a century. It has proceeded so far indeed in statistics that one statistician now has difficulty in understanding the language of another. The eugenist and the monetary expert speak a different language. A zygote means little to the student of money, while the eugenist is not expected to understand the relation of devaluation and inflation. All this leads to such specialized publications as the *Journal of Juvenile Research,* or the *Bankers' Insurance Managers' and Agents' Magazine,* and (in all countries) to 4,500 social science journals and serials.

One of the consequences of this specialization is a smaller proportion of general articles and general works. Synthesis becomes more difficult. The recent

[1] Address of the retiring vice-president and chairman of Section K—Social and Economic Sciences, American Association for the Advancement of Science, Boston, December, 1933.

death of Wilhelm Wundt removed the last social scientist who knew it all and who was able to synthesize on a large scale. And there will never be another, for the differentiation has since Wundt's time become too great. There seems to be just as great a demand for general works, but their production by scholars is more difficult. This decrease in the proportion of comprehensive works and articles is of course to be regretted. At times the demand becomes so great that the output is increased. Thus in history, shortly after the war, there was a demand for world histories to give a perspective. Also the orientation courses in the junior colleges, in general science and in social science, lead to more comprehensiveness, if not to synthesis. There seems to be at times an alternation between more intensive specialization and a more comprehensive summation. To this decline in the proportion of general works at the present time some exceptions may be noted. The text-book, for instance, is a general work which has a steadily increasing demand. A text-book, however, is not a research work, but rather a compilation of materials set forth in a pedagogical form. Histories are another possible exception, because they all may be considered as general works.

EXPANSION

Another trend in social science has been its expansion. The scientific movement has been annexing territory to the already vast domain under its sway. Expansion and differentiation have gone along hand in hand. In fact, differentiation is a device which encourages expansion.

The wider extension of scientific activities is due to the great popularity to-day of science. This was not so true of the science of Galileo. But scientific medicine, applied chemistry, electricity and scientific agriculture have brought such marvelous benefits to mankind that the word science has become magic. Every one wants to be scientific; even when he should not be, even when he is trying to be ethical, educative, journalistic or even poetic. Hence, the word science is applied to-day to the simplest of operations.

In the beginning of the social science movement the term science was one of grandeur and was applied to matters of great dignity, such as international trade, the wealth of nations, the origins of democracy, while subjects such as quarrels among married couples or the misbehavior of boys and girls were then hardly considered subjects worthy of science. Something like these conditions exist in Europe in sociology to-day, where juvenile court records, for instance, are not thought of as within the scope of science, although the conclusions drawn from these records are often quite scientific. A similar restricted use of the term science has been noted in regard to primitive peoples. Consideration of their scientific achievements are judged in the fields that convention has designated as science, such as astronomy and chemistry, fields in which they are not at all scientific. Their achievements, however, in tool-making, in agriculture, in the domestication of animals or in hunting are not considered as science, but it is here that their scientific achievements are considerable. Of course, science as a method of discovering reliable and enduring knowledge may be applied either to the most trivial or the most significant. The science is as good in either case.

In political science at the beginning of the century major interests were in the structure of governments, in juristic problems and in the field of political doctrines. Later political parties grew as the object of scientific study. Still more recently in this discipline, the word science has been extended to cover the investigation of a whole range of non-governmental bodies, such as labor unions, farmers' organizations, women's clubs and civic bodies, which in truth have much to do with the way governments operate. So also the newer study of public administration has extended the scope of science over a great mass of practises that were formerly given little serious scientific attention. Indeed, these newer trends in political science employ somewhat more scientific procedures than did the older studies of law and political doctrine.

In economics the great territorial expansion of the scientific movement took place before the beginning of the present century, for the practical questions of our economic life have always been considered among the most important, and hence worthy of the great name of science. Yet more recently new subjects, such as the business cycle, not formerly studied, have been taken up by economic sciences. The period under consideration has seen the rise of the many schools of business. There the scientific method which has been used in studying the economic questions of society is used to study the economic questions of business.

In sociology the scope of science has extended to encompass the whole field of social work. At least the aid of scientific study of social work problems is being utilized for social service. Other fields in sociology in which social research has expanded are rural social life, urban communities, the family, juvenile delinquency and organized religion. The evidence from the sociological journals also indicates a recent growth in the phenomena of social change. Perhaps the greatest expansion of activity during the past two decades in sociology has been in social psychology. In sociology the interest in psychology has

been much more marked than in economics or in political science, though the social aspects of psychology have been incorporated to a greater or less degree in all the social sciences. An illustration of these processes of expansion, differentiation and spread of the word science may be noted in social psychology in the study of child behavior. Batteries of trained observers have watched for weeks little children playing together, have recorded each type of movement thousands of times and have expressed these relationships in mathematical formulae. That so much measurement should be given by trained scientists to the number of times one child snatches a toy away from another has seemed to some of the older group as a debasing of science. But the net of scientific inquiry has been thrown wider and wider to catch the process of personality formation.

MODERN SOCIAL PROBLEMS

These processes of differentiation and expansion have led to a great shift of interest to the study of modern social, economic and political problems. It was to have been expected that the expansion would lead in this direction, though such was by no means inevitable. Why has the trend been toward the solution of modern social problems?

The trend of science is a function of at least two factors. One is the demand for knowledge. The other is the presence of adequate scientific tools and materials. The demand for knowledge about our social problems is natural. The growth of this demand is due to the increasing volume and rapidity of social change. For social change brings problems because of the unequal rates of change of the different parts of society, and with change come greater possibilities for efforts toward their control and direction. In other words, there are more social problems and more possibilities for their solution. This shift of activity toward social problems is to be noted in anthropology and history, disciplines where it would be least expected. The anthropologists contribute to the present-day study of race and the relation of culture to personality. The historians are bringing history closer and closer to date, while some are even making contemporary investigations. A line of demarcation based on time between history and the other social sciences is becoming less easily ascertainable. This urgent need for guidance on the modern social questions of policy has been accompanied in this country by grants of funds for their scientific study on the part of private foundations and on the part of government. Such funds have had an extraordinary stimulating effect. An illustration is the great volume of research activity among rural sociologists and agricultural economists fostered by grants of money from Congress.

Science grows not only because of the demand for knowledge, but also because it has the equipment with which to make the pursuit. Cytology rests upon the use of the microscope. The technique of handling time series of economic data has made possible a great deal of research activity on economic and business trends. The lack of capacity to deal scientifically with material has not, however, been so much of a hindrance to activity as it has to successful achievement. Thus primitive peoples were very active in studying and practising medicine, but accomplished little, and modern peoples have been greatly concerned with race relations, but their scientific accomplishments in this field have been few.

But certainly one of the reasons for the increasing research in contemporary problems is the greater facility for dealing with them. Records and measurements are in general better the more recent the phenomena are. For we have been improving the collection of data. Thus weekly index numbers of prices are very recent, and only in 1930 was there a census of the distribution of goods. On contemporary questions, it is also possible sometimes for an investigator to make his own collections of data, which can not be done so well for the past.

RECESSIONS

The discussion thus far has been largely concerned with the great expansion of social science, and one might well ask the question, Have there been no recessions? Unquestioned recessions are not easily found. There have been shifts of interest, but in these cases there may have been no actual decline, only a percentage decline. Thus in the case of biological sociology there seems to be a smaller percentage of sociologists with major interests in this field than formerly, despite a very appreciable interest in eugenics. The causes of this possible decline may be altogether special, namely, the natural ebb of an over-expanded interest in Darwinian biology, and the very great rise of interest in culture, which has caused considerable modification in the claims of social biology. There are also special reasons why there has been a shift of emphasis in political science away from the legal approach. But the decline of emphasis in economic "theory," in systematic treatises in sociology and in the history of political doctrines is due to the same general cause, previously referred to. Changes in emphasis are occurring continuously in matters of contemporary social questions. Thus the world war brought renewed interest in international relations and in population questions, and as proportionately more attention is given to these less is devoted to other problems, such as certain socio-religious questions, slavery or immigration.

BOUNDARIES

The trend toward specialization and that toward the solution of practical problems are at times in conflict. The conflict lies in the fact that the fields of specialization do not synchronize with the circumference of social problems. Thus there is no field in economics that completely covers the labor problem, yet most of the research workers in this problem are trained in economics. The differentiation of a social science based wholly on the study of modern social problems would be different from the differentiation of a social science that was never concerned with practical questions. Attempts have been made at various times to organize a body of scientific knowledge in social science with little consideration of practical problems, and the result has been a set of abstract formulations, quite unrealistic. The actual development is a compromise between these trends. The influence of the reality of present issues is forcing revisions of so-called "pure" sociology. The concepts of "pure" and "applied" science were borrowed from natural science, where a body of "pure" science is worked out and "applied." The flow is from the "pure" to "applied," though there are some counter movements. But in social science the usefulness of this differentiation may be questioned. The flow is perhaps more from the "applied" to the "pure," that is, from those practical problems which are analogous to the field of "applied" science, to the systematic body of knowledge which is analogous to the field of "pure" science.

But whatever may be the effect of practical problems on the growth of social science, during the past decade the study has tended to break down the barriers between the various social sciences. A student of crime must cross many boundary lines to search in the fields of biology, psychology, law, economics, psychiatry and sociology for the answers to the questions he seeks. There is thus a trend toward fluidity in boundary lines, so much so sometimes as to almost undo the effects of previous differentiation. For instance, it has been said that in the future all economics will be political economy. This result is expected because of the increasing partnership between industry and government.

Tendencies in human affairs are often accompanied by counter tendencies. It may be asked therefore whether boundary lines in the social sciences are tending to become less fluid. I think so, particularly between the scientific part of social science and the intellectual undertakings that are not especially concerned with scientific research, such as ethics, philosophy and literature. In earlier times the social sciences and the humanities were not separated. Philosophy and sociology were undifferentiated. The literary essay was not distinct from political science. But soon this differentiation took place, yielding specialization in journals, in professorships and in national associations. Nevertheless, much writing in social science, both in articles and in books, is still an undifferentiated mixture of attempts to persuade, to entertain, to interpret meanings, to be literary, to discuss ideas and to express one's beliefs and prejudices as well as to draw reliable conclusions from data. But a volume of writing known as social science research, which is concerned only with presenting the new knowledge and the method whereby it was discovered from data, has become very large in amount. This type of writing is sometimes slightingly called "fact-finding." It is becoming quite sharply distinguished from journalism, propaganda, ethics, philosophy or essays. Between research and these other types of intellectual display the boundary lines are becoming more rigid.

The splitting off of other types of writing from the presentation of research is resented by many, especially by those who like to influence others and to interpret meanings. But the further erection of barriers between the exposition of research and other types of writing in no way diminishes the activity of those who wish to discuss meanings and ideas. Nor is there any invidious comparison as to the value to society of scientific writing and of other types of intellectual writing. Who can say which is of more value?

We conclude, therefore, that the barriers between the different social sciences are becoming weakened, but the barriers between scientific writing and other kinds are becoming strengthened.

METHOD

This divorcing of other types of writing from social research is not so much a separation of subject-matter as of method. The method of the essayist is different from that of the scientist. This divorcing of social science from other than the scientific suggests a possible restriction of method rather than an expansion and differentiation, as was the case with the subject-matter. The long discussions of methodology in sociology have given way to consideration of techniques of investigation. It seems obvious that the methods of intellectual activity in general are more varied than those specifically concerned with science, at least that part of scientific work that draws conclusions from data, which is the portion that usually finds publication. Scientific verification restricts intellectual activities to the evidence and limits the mental associations that are dictated by emotion, which form such an attractive part of less restricted intellectual work. Of course the first phase

of scientific work, namely, originating the idea, developing the "hunch" and formulating the hypothesis, is a much less restricted intellectual activity than the verification, and permits of the greatest freedom of association of ideas, emotional or otherwise. But this phase does not become a part of the literature. So we say, then, splitting off of social research from other types of writing has meant a reduction in the variety of methodology.

Indeed, there has been increasing reliance upon the historical, descriptive and statistical methods to the exclusion of others. It may be well to exemplify by reference to some of the social sciences. In ethnology the rise of the historical method since the beginning of the century has been quite phenomenal. This method in ethnology arose as a protest against the various attempts to explain cultural phenomena in terms of biology, race, instincts and climate. Within more recent years there is said to have been something of a reaction away from the historical method in anthropology, as it was practised, in favor of a functional approach. But indeed a functional account actually is, if done well, an extension of the historical or descriptive method into the new fields of meanings and functions.

In economics, the recent interest in institutionalism really means a use of the historical or descriptive method. The method is somewhat in contrast to the methodology of so-called economic "theory," which was observational analysis of complex relationships of the important concepts. These observations, however, did not rest on strictly inductive work, but were based upon abstracted situations. It was a short-cut method of dealing with the "Gestalt," and got very good approximate results. More recently "economic theory" has been supplemented by the statistical technique.

In sociology the historical method has not been so extensively used as has the descriptive, the chief method of contemporary social investigations and surveys. The historical method in sociology is found particularly useful, as in anthropology, in explaining phenomena in terms of culture, as in contrast to supposed explanations in terms of psychology of races. It is also an aid in the determination of the psychological factors. The case-study method, when properly pursued, is an attempt to get at behavior by the historical method. Studies of social change rely also on the historical method.

The historical method in the social sciences is of course more than merely the history of single events. It is also the history of relationships, and, when these relationships are successive, of processes. To describe the events of the past, though difficult enough in some instances, is much more simple than to describe accurately processes and relationships. Early writers in social science were concerned a great deal with describing what they called social processes. But soon it was found that further detailed descriptive work was needed. So there followed this increase in the use of the historical method.

TECHNIQUES

The demand for more reality in the generalization of processes and relationships in the historical and descriptive methods has led to an increasing use of statistics. An illustration of this is the necessity for quite exact accounts of the process of business fluctuation. No description in loose terms will meet the requirements, which in this case are no less than the necessity of predicting the booms and depressions. All the evidence shows great extension of statistics during the period under review, particularly during and since the world war.

The increasing use of statistics has come about partly through the better provisions made for collecting them. The usefulness of statistics was very apparent during the war, when the production of industry had to be adapted very closely to the wartime needs, felt both by the government and business. It is said that those countries that have dictators find a greater need for statistics because of the planning and control involved in these recent dictatorships. Thus Italy and Russia have surprisingly good statistics. In the United States the coordinated effort of the New Deal to pull out of the great depression of the early 1930s called for more statistics. Particularly has this been true of the National Recovery Administration and of the Agricultural Adjustment Act. The monetary program rests also on the more exact measurement of statistics and the frequent reporting of them.

The wealth of the nation has also been a factor in the growth of statistics. The collection of statistics and their manipulation are costly to government, to business and to private bureaus and universities.

It should also be mentioned that invention within the field of statistics has produced new useful formulae that are especially adapted to the social sciences. This is true of index numbers, measurement of trends, correlation and contingency coefficients, scales for measuring social attitudes, equations of curvilinear relationships, methods of holding variables constant. These new developments have aided in the analysis of social phenomena.

Previously it was argued that the subject-matter of social science had undergone expansion and differentiation but not its methodology. But there has

undoubtedly been a multiplication of techniques, as has just been noted in the case of statistics. Similar expansion and differentiation also characterize the historical and descriptive methods.

The extension in the use of statistics has been most wide-spread in economics. There is of course much analysis and history in economics that is not very amenable to the statistical technique. But even in the field of economic theory there has recently been an increased use of statistics. One journal has been founded devoted solely to the application of this method to economic theory.

Less of the subject-matter of sociology than of economics has been found suited to statistical techniques. About one half of the social research in sociology uses the statistical method.

Of all the great social sciences, political science is the one where statistics has found least use. The descriptions of governments and their functions and laws call for few statistics. Some use has been made of the quantitative method in studying election returns; and no doubt as the rôle of quasi-governmental institutions of an economic or social nature become more and more the object of study, statistics will be needed.

At one time statisticians were a special group more or less apart from sociologists, political scientists and economists, and, along with these groups, were organized in a great national association. But now the economic association and the sociological society have large numbers of statisticians in them, and many of the articles in their journals deal with statistics. The original function of the American Statistical Association has thus in part been lost, and new ones developed. Statisticians therefore are becoming less differentiated from the other great social science groups, a reverse of the differentiating process.

Statistics as a method is important because it is the nearest parallel in the social sciences to the laboratory or experimental method. The essence of these methods is the holding of factors constant, so that the effect of the variation of a single factor may be seen. Statistics has a number of devices that do this very well, better by far than most of the other methods.

The Evolution of a Science

Finally, there remains one other way of looking at trends in social science. Oftentimes the process of development of a young science as time goes on is one from theory to verification, very much as is the development of a single piece of research. In the early stages a young science is supposed to be speculative, theoretical, concerned with concepts, exploration, and abundantly intellectual. A scientist looks over the field and busies himself with pointing out the significant, advising what ought to be done, and engages in the work of classification. He is looking for guiding principles around which to organize his material. There is a breadth and catholicity about his scientific endeavors and his vision.

Later as some of this preliminary work reaches a point where there is much waste in dialectic or where diminishing returns set in, then verification is stressed. The emphasis then is on checking the speculations and hypotheses. The search is for more exactness, and for greater reliability of the supposed knowledge. The checking is not so much by criticism and debate as by evidence and data. Intellectual processes are more disciplined by the restrictions called for in verification.

There are many individuals who regret such transitions in the growth of a science. They miss the discussion, the exploring, the debate about concepts, the apparent lack of appreciation of values, and particularly the unrestricted play of ideas which characterized the earlier phase. I doubt, however, whether there is much less of this type of intellectual work taking place. It is rather not so customary to print it. The demand is to restrict publication more and more in scientific journals at any rate to the presentation of research that has been tested by data and found to be reliable. The exploratory work, the discussion of concepts and the building of theories seems to go on in the initiating of research; but these initiatory steps do not find publication until the verifying process has been done.

It is not at all clear that a science must inevitably develop over the years in such a sequence, that is, must go through this theoretical stage before reaching a verification stage. Presumably a science might profit from the mistakes of the past and proceed at once to the emphasis upon verification and reliability. But few of the social sciences have so profited from the past of other sciences, unless it be statistics. Certainly sociology, political science, anthropology and economics went through something like the first phase of observation, classification and theory. Perhaps economics pulled away first, followed by anthropology, political science and sociology. At any rate during the period being reviewed, there is everywhere increasing emphasis on reliability of knowledge. The greatest obstacles to the development of science in the social field are complexity of the factors and the distorting influence of bias. These are formidable, but certainly the trends of the present century are most encouraging, and we may look forward, because of social science, to a greater control by man of his social environment.