TV

[redacted] An Unused Prefatory Note

(Summer, 1948)

If the science of politics, as Aristotle conceived of it, were a century in advance of its position today, it might be most useful to statesmen in the present world and community crises, ~~that this age would be called the Age of Human Science.~~ The human sciences today, despite their many internal differences, promise to lead men to greater self-knowledge, to an understanding of others, and to the techniques of personal-social therapy. The force of its findings about human facts, values, and limitations would compel an attention almost completely lacking. Nor need this statement be predicated on the idea that science could in world tell men what their final values ought to be.

However, our pittance of knowledge today lends itself to wrecking human beings much more than it does to helping them. Statesmen, children in play groups, administrators, fathers of families, and reformers find it easy to crash through the conditions of general satisfaction with the aid of some rather effective egocentric principles of human behavior. They can claim utter ignorance of or the baffling complexity of those principles of human behavior that would more nearly approximate general satisfaction. Whence comes, perhaps, that feeling that so many of us know through experiences in wars, depressions, and group tensions, the feeling that "people are not bad; they are just ignorant."

Nor are scientists bad; they are just ignorant. It is no—

~~coincidence~~ significant that Machiavelli's Prince is far better known than his Discourses. The Prince was political science ~~taking only~~ treating primarily the dependencies of the egocentric variable. The Discourses were political science ~~taking the variables of~~ dealing with the dependencies of the several satisfactions ~~for a~~ sought in a republic. Every scientist knows that when the number of independent but inter-dependent variables is increased in a complex problem the problem is much more difficult to solve. So the Prince was an astonishing success at subjecting human behavior to the one independent variable of the ideal character of the prince, while the Discourses ~~do~~ did not achieve quite the same success. for the varied needs of a whole people.

Several observations make one believe that the ~~speculative gap~~ backwardness of a century ~~is a~~ may be fatal. Human science among the Greeks prospered when the conditions it proposed to establish were in the throes of destruction. Twentieth century politics is steadily enclosing the free pastureland of political science. And then it may be that political science ~~itself, which,~~ whatever its degree of determination by outside influences, has some ability to advance or destroy itself. This symposium treats of one aspect of this last observation. It asserts that internal adjustments are necessary in the field of political theory. Each one of its papers asks what is the condition of political theory within its scope, and how can political theory better adjust itself to the needs of political methodology and political research. In answering these questions, A positive program of scientific alliances is proposed. The results of the alliances, which, it is encouraging to note, are receiving ~~encouragement~~ support from many political scientists, may be expected to further the objective of a more enlightened public policy. Perhaps we can do more than we have in the past to assure that political theory contributes to the advancement of political science.

IV

Notes for an Introductory
Essay on MODERN METHODS OF POLITICAL STUDY
(Summer 1948)

The basic methods of scientific study are ~~no different~~ the same today ~~than they have ever~~ as they have always been. A great deal more is being accomplished with those same methods, it is true, but there has been no qualitative change in the minds or senses of men which would have introduced new methods. We might use a more sophisticated classification of such methods but we prefer to call them here by homely names. And therefore we say that political scientists employ in their work one or more of the descriptive, the genetic or historical, the comparative, and the analytic methods. Why men use the one or more methods they do use at any particular time is again a problem of the sociology of science with which we will not be concerned.

One realizes immediately, of course, that a method may be badly or well used, just as a man at one time may fall victim to all the snares of common sense so-called and at another time perform most scientifically. Historical, social habits cause men at certain periods to use methods badly. Often certain fixed ideas in a culture so permeate science as to cripple some of the best work being done. There was a time, for example, when no political scientist could write a treatise without describing how man lived in an isolated state of nature before engaging in a social contract with his fellows to form a state. At another time, political scientists felt they had to devote a good part of their work to describing the idea of "sovereignty" as some inherent, mystical capacity of every government. So one could go on reciting the misapplied energies on every question of political science. In

fact, we may make our next point by adding finally an example of a delusion of our own time. In some quarters, it is believed that no work is scientific unless so infinitesimally small and so thoroughly based on immediate observation as to deny questioning. Several of the fallacies behind such a statement have been implied previously. In addition to all else, such a statement confuses techniques with methods, tricks with processes of knowing.

The fundamental modern methods of study are the ancient ones, and the fact that past generations have not created a simple master system of political science cannot be held against the methods, but rather against all the conditions, previously related, under which the methods are applied. These traditional methods are still as valid as before if properly applied. In many cases modern applications of them are much the inferior of their classical ancestors. Thus the erudite Nazi historians turned out histories worse than that of Herodotus. Many recent works on the justices of the Supreme Court of the United States would have been shamed by comparison with Beveridge's Life of John Marshall. And Plato's description of the tasks of the rulers of the republic bear up very well in comparison with that of Andrew Jackson. The time may come when a preponderance of efficient new techniques will be the imperative accompanist of methods of study and the old studies will be relegated to antiquarian interests, but when it does arrive it will not abolish the older methods but only adorn them.

The Descriptive Method

Perhaps the method of studying political activities by

description is the easiest to comprehend. It is by no means easy to accomplish for a true and pure description is rare and complex. One cannot escape a great admiration for descriptive works of the type of the Lynd's Middletown or some of the anthropological descriptions of primitive society. One feels in reading them a sense of real proportion, of real detail, of being in the process described. The material evidence lays before one like a fine map, summarized and communicated with enormous accuracy. The abstractions and generalizations practically jump out at one, yet nowhere is the form of the description selfishly analytic, that is, exclusive of that which does not fit particular hypotheses. To be descriptive is to recount, characterize, or classify the material of politics. Completeness, precision, proportion, and communicability are the virtues of good description. A mirror to reality is the primary goal.

Middletown and Middletown in Transition, its sequel, are accounts of life in a small American midwestern city. The influence of the industrial revolution and technological change on many aspects of American social behavior are minutely detailed. The association of religious habits with economic habits is revealed, and political attitudes and behavior are shown to be intimately associated with religious, economic, and ideological institutions and tendencies. Both works are historical as well as descriptive, for they study social trends, the first covering Middletown from its early period to the middle twenties, the latter through the great depression of the thirties. Thus, Middletown in Transition could say that despite the depression, the New Deal, and much social ferment and change, the townsfolk retained much of their traditional value system. They

still wanted cars as much as before, they still were urged on by great aspirations to move up the social ladder, they still wanted to avoid government regulation, and they still had little interest in politics and government.

A more specialized type of descriptive study would be Salter's Pattern of Politics in which the intimate details of the life and work of the "small-time" politician is portrayed. We see, for example, how the precinct captain of a political machine wins votes, fitting his appeals in an election campaign precisely to the widely varying needs of his constituents, and we understand what he gets out of politics by the many illustrations of particular politicians. Another example of a political descriptive study of some importance would be Lincoln Steffen's Autobiography, which though consisting of an account of events through time, is essentially a series of masterful pictures of American machine politics in the cities. A further example of our descriptive method, this time with strong analytic and classificatory tendencies would be the Temporary National Economic Committee's monograph #21 (1940) on Competition and Monopoly in American Industry, which ranges throughout the economy, describing the concentration of production, the monopolization of markets, and the industrial policies of particular firms and functional components of American industry. A further type of descriptive operation in political science is represented by the many polls of "public opinion" which go on daily and are reported in the newspapers and magazines. They give quantitative estimates of what proportion of the community members take a particular stand in reference to a particular issue of current interest. The polls

have elements of the comparative and analytic in them, for they frequently allow for contrasts between one geographical or class section of opinion and another.

The Historical Method

The historical or genetic method in political science gives to the field a great element of dynamism. We mean by this method the relating of events over periods of time. Much that is called history is the description or analysis or comparison of conditions that existed at a particular time in the past. Strictly speaking, these are not of the essence of history to our way of thinking. They are non-current social studies. What gives them the name of history is their skilled use of techniques of exploration into the documents and other materials of non-living generations.

The essence of history is the trend, the genesis, the interrelating and connecting of temporally separated events or conditions. Thus, the central theme running through the majestic volumes of Gibbons on the Decline and Fall of the Roman Empire is "How did the Empire fall?" Other general histories of importance to political scientists would be Oswald Spengler's Decline of the West, Arnold Toynbee's Study of History, and Pitirim Sorokin's Social and Cultural Dynamics. All three describe cycles or pulsations of political movements over long stretches of time. More specialized intellectual histories would be A. W. Benn's The History of English Rationalism in the Nineteenth Century or Crozier's History of Intellectual Development or Orton's The Liberal Tradition, or Delisle Burn's stimulating little book on Political Ideals. There are a number of attempts to treat the origins of the state historically, such as Lowie's Origin of the State and Franz

Oppenheimer's The State. There are innumerable treatises on a complex of associated factors observed over a limited period of time. They make history rich in materials for social science. One could mention Maude Clarke's Medieval Representation and Consent, Edna F. Weber's Growth of Cities in the Nineteenth Century, Neprash's Brookhart Campaigns in Iowa, 1920-1926 and many others as limited studies which are useful to political scientists in studying trends and tendencies of political behavior. Charles Beard's Economic Interpretation of the Constitution of the United States is particularly worthy of mention in this connection for its excellent researches into the personalities and interests involved in the movement to create the American Constitution and the elaborate investigation of the progress of the struggle in the states to ratify the Constitution. The prediction of a probable future event may depend exclusively on generalization from current events but in political science it is more likely to depend on observed occurences from the past and take the form of an extrapolation of past tendency into the future. One can thus expect on the basis of past experience, for example, that the occurence of a future depression will cause the defeat of a large number of incumbent elective officeholders.

The historical or genetic method, as we construe it here, also encompasses the many trend studies that have been published in recent years such as Recent Social Trends (1933), and L.D. White's Trends in Public Administration. The annual Economic Report of the President to Congress is a compilation of economic trends of the past year with political recommendations based on them and other factors.

A very important part of the historical method concerns individual histories. Biographies of men of consequence have been written since very early times. From Livy's lives of the Roman emperors to Ludwig's life of Napoleon, we have an abundance of biographies, many of them, however, seriously defective for studying leadership by precise methods of an analytic or comparative kind. In recent years, developments in the social sciences have improved the output of usable biography and extended the sphere of biographical history to individuals outside the circle of the great. The great have been studied in relation to their culture, abandoning the one-sided Nietsche and Carlyle view that history is the record of the footsteps of great men and adopting rather more of Tolstoi's dictum that "Studying the laws of history, we must absolutely change the objects of our observation, leaving kings, ministers, and generals out of the account, and select for study the homogenous, infinitesimal elements that regulate the masses."

John Dollard in his Criteria for the Life History (1935) and other places has shown the way to using personal developmental materials in systematic research into social problems. Psychoanalysis and psychoanalytically-oriented social scientists have produced a number of case studies of individuals, using common concepts in interpreting and describing their lives. This agreement on terms and concepts has proved useful in relating one case study to another. Comparability has often been lacking in traditional biographies. We must realize that scientific writing ought not be a single, unique reference. It may be self-sufficient to its immediate purposes but it must also be usable later on by others in

making further descriptions, analyses, comparisons and trends. Only thus can a body of science be built up. Another of the most prominent researches in biographical politics along psychoanalytic lines is Lasswell's Psychopathology and Politics which develops from case histories a general political type of man and classifies the cases studied into several sub-categories of "political man". More traditional but also useful among the kinds of political biography is Harold Zink's City Bosses in the United States. A number of bosses were studied to test various popular beliefs in regard to their origins, education, rise to leadership, and methods of operation. The results showed that the popular belief that the boss was uneducated, a foreigner and most often a gangster had only remote relation to the facts. Merriam's Four American Party Leaders and Gosnell's Boss Platt and His New York Machine are other examples of useful political biographies. Taussig and Joslyn's American Business Leaders presents another aspect of the power situation in America. Nor ought one to slight the great utility of the memoirs of statesmen such as Colonel House or Lloyd George, or first hand accounts of important events by participants such as are included in Sherwood's Roosevelt and Hopkins, or autobiographies such as those of Augustine, Rousseau, or Gandhi.

The Comparative Method

The third method of political study is the comparative. The comparative method segregates the material of politics into parts consisting of similar processes. It proceeds to describe the characteristics of one part in relation to the other, deriving findings from the similarities or differences which appear owing to particular differences in the composition of the two parts.

Comparison is most effective when the materials compared are not completely dissimilar or utterly similar. Comparison relies on the suggestibility of analogy to produce new findings about the matters compared. This is true when Russian Government is compared with American, Zuni culture with Navaho culture, or the parliamentary system of government with the presidential system.

The compared materials may be related or unrelated. Thus Ruth Benedict studied unrelated cultures and found therein Patterns of Culture revealing general tendencies of human societies. But also psychiatrists find that the study of the abnormal throws light on the normal mind because the basic physiological and mental processes of both are believed to be the same. Again, Robert Brady, studying Business as a System of Power, analyzed genetically the development of cartelized industry and its political influence in Japan, England, France, Germany and Italy, and arrived at the conclusion that American cartelization would behave the same way once the American economy had achieved the "maturity" of the other economies. Here, comparison was used to predict in one nation a trend historically established in other nations.

The study of comparative government, as it is called in current curricula of departments of political science, goes back as far as man has had friendly or enemy tribes to compare himself with. The Bible is full of scoldings against the variety of non-believing tribes whose customs were incompatible with the Hebrew code. Aristotle's politics is a comparative work, building its principles of good government on the study of many different constitutions collected by his research assistants. The Travels of Marco Polo are

largely reflections on the customs and behavior of foreign nations viewed through the eyes of a Venetian nobleman who travelled far in search of trade. In the 18th Century an Englishman and a Frenchman did each other's land an international courtesy by writing about the other's government, deriving thereby some advantage to their generalizations concerning their own countries. One was Montesquieu in his Spirit of the Laws. The other was Edmund Burke in his Reflections on the French Revolution. In more recent times, three general and excellent works of comparison are James Bryce's Modern Democracies, Woodrow Wilson's The State and Herman Finer's Theory and Practice of Modern Government.

Wilson's The State

~~He~~ begins with an historical study of the origins of government; he discusses the governments of Greece and of Rome; brings in the great influence of Roman law, then discusses the fusion of the barbarians with the civilized Roman political system, and is ready to commence his comparative study of the European governments which have developed out of the fusion. So he discusses in detail, drawing liberally on historical materials in each case, the governments of France, Germany, Switzerland, Austria-Hungary, Scandinavia, Great Britain and England. In each case, he emphasizes ~~the~~ those characteristics of each of these governments which have been of large importance in influencing other governments abroad.

Thus he gives considerable attention to local government in England. Finally he concludes his comparative survey with a lengthy treatment of the United States. Then he begins a comparative analysis of the basic problems of government. He compares Roman

and English institutions. He compares various theories of the nature and forms of governments. He discusses the process of law everywhere and then from a study of a number of governments he derives certain conclusions about the essential functions of governments, ending his book with a chapter on the objects of government. He concludes that the state is not only indispensible but is a beneficent organ of society. As far as the functions of the state are concerned he would object on the one hand to socialism and on the other hand to a neglect of the social security and well-being of the people.

Comparative studies of much smaller compass and of far greater precision are to be found. The Stones' Study of City Manager Government in the United States compares the operation of numerous manager-type municipalities to determine their chief successes and problems. The Attorney-General's Committee on Administrative ~~Law~~ Procedures compared the operation of adjudicatory elements in a large number of federal agencies in order to derive certain principles regarding the excesses or successes of existing types of agency adjudication and to make necessary recommendations for the modification, abolition or encouragement of particular practices. Comparisons of potential fighting strength among nations are a common occupation of writers on international relation. Publicly and privately-operated enterprises are another frequent object of comparison, as e.g., in George Graham's Study of "Personal Practices in Business and Governmental Organizations", which concluded by stating that both "tend to employ similar methods of administration and operate with similar efficiency."

The Analytic Method

Our fourth major method of studying political science is the analytic. While the descriptive mirrors the material, the genetic

depicts its moving processes, and the comparative examines its parts in relation to one another, the analytic method breaks down the material into its constituent parts and demonstrates the relation of the part to the whole. Of splendid analyses, political science has many. The concept of "power" has been used to analyze political behavior a number of times. Machiavelli's The Prince, Harold Lasswell's Politics: Who Gets What, When, How, Charles Merriam's Political Power and Bertrand Russell's Power are some of the treatises on the composition of power. Political values, including power, have been described from Plato's Republic to Dewey and Tuft's Ethics. The techniques of dictatorship have been analyzed in Silone's School for Dictators, the factors in making administrative decisions in Simon's Administrative Behavior, the nature of war in Quincy Wright's Study of War and the nature of the public in Dewey's The Public and Its Problems. Limited and specialized analyses abound: Merriam and Goswell's Non-Voting, Beard's The Economic Origins of Jeffersonian Democracy, ~~Locke~~ Laski's article on "The Personnel of the English Cabinet, 1801-1924," T. H. Marshall's analysis of the concept of "Social Class", etc. Check This

Political scientists who favor the analytic method are preoccupied with finding concepts to break down their materials. Some of the favorite political concepts have already been mentioned-- "average man", "class", "ideology", "power", "equality", "sovereignty", etc. A number of abstractions of observed and experienced objects in the external world are in many respects concepts, too, useful or not useful as the case may be. While the "individual" is an observable unit, he is also a fictitious, isolated entity because

his individuality may be in large part social and in that respect his "individuality" is part of a large "sociality" or network of social communications. Aldous Huxley displays this ephemeral quality of the individual in his Brave New World by having certain of his characters repeat, as great truths, sayings that were drummed into their minds by loud-speaker as they slept in the huge nurseries of the fancied future world.

The utter requirement of concepts is that they be defined, even though they do not refer to real things but only to abstractions of qualities of real things. This is preliminary to stating that the big danger of conceptual analysis is the distortion of reality in the effort to achieve understanding. Despite the danger, conceptual analysis has been most fruitful in political science. Max Weber has used his "ideal-type" method in characterizing societies so as to give profound understanding of the interrelationships of great groups of events among which obvious "causal" connections are impossible to observe or describe. Mannheim has given us kinds of "mind-types" or ideologies which, though rarely perceived in individuals, can be seen in the aggregate tendency of groups.

The separation of government into organs is a common mode of political analysis. To one person, as to Montesquieu, the separation of powers may seem to be the most fruitful distinction in analyzing government and he thus describes the state as composed of the legislative, executive and judiciary. Later on, Frank Goodnow divided the process into two, policy-determination and policy-execution. In either case, the author gives his reasons and

evidence for his particular kind of analysis. The classification of governments by types is another perennial favorite of political analysis. While Aristotle set up three types and declared that power resided with the king, the aristocracy, and the people in turn, an analysis subsequently of tremendous influence in political science, Mosca declared that a ruling class was a constant element in every state no matter how structured.

A word of caution about dealing with our four methods is in order. A single work never is purely one or the other. All the works we have cited are mixtures. We have extracted a strong methodological tendency in their work. In their political science, Plato tends to proceed by deductive analysis and analogical comparisons, Aristotle by description and comparison, Aquinas by deductive analysis, Machiavelli by comparison and analysis, Burke, Hegel, and Marx by historical analysis, Mill by comparative analysis, the Freudians by genetic analysis and so on. Very often a writer uses all four methods extensively. Darwin's Origin of Species is a case in point. They may sometimes be almost inextricable from each other.

Finally, the fact that much valuable work is introspective in nature makes our attempt to describe them by their general method sometimes misleading. By introspection we mean the unconscious, intrapersonal processes for arriving at a scientific judgement which are based on past experiences and unrevealed forms of thought. The introspective scientist "plays by ear". It is risky, often bad, but sometimes brilliant. Occasionally, someone will say that the best social science is in the great novels like Dostoievski's Crime

and Punishment, Flaubert's Madame Bovary, Proust's Remembrance of Things Past, or Mann's Magic Mountain. And it is true that the novelist, unworried by the attacks of those scientists who want every premise and evidence on paper, can introspect with abandon and unashamed. The results are sometimes more brilliant, perceptive and true than prosaic attempts which are confined by a poverty-stricken imagination and rationalized into a "scientific" method.

The Techniques of Today

Our modern age is one of techniques and gadgets. Social science has benefitted by the acquisition of many neat ways of solving problems of research which our ancient political scientists were not aware of. The blessing has not been unmixed. Substance is sometimes sacrificed to technique, solidity to virtuosity. But we may hope that an ultimate balance between the two will come. If so, we can expect progressively more secure data and findings in politics.

We will group our descriptions of the new techniques according to the steps in scientific procedure with which they are generally associated: The choice of objects for study, the gathering of data, the testing of the data, the control of data, the analysis of data, the rechecking of the analysis, the communication of the findings, the review of the findings, and the coordination of the findings. In the matter of techniques as in the matter of procedures and methods, overlapping is the rule rather than the exception. A particular technique may be used in more than one stage of procedure, and often one technique employs more than one method.

For example, a statistical average may be useful in gathering data, analyzing data, checking them with other data, communicating the results of a study, and coordinating one finding with another. An average may be used to describe material, measure a trend, compare materials or analyze them. We take up a technique here roughly under the procedural category where it occurs most often in political studies.

Techniques in the Choice of Objectives

A wide difference exists between mere interest in an area of study and the design of the study just before actively undertaking it. Interest alone is a fatal criterion because many interesting problems are impossible of solution at present, nor perhaps ever. Before plunging into a study one must feel satisfied that he does not venture upon it through sheer idiosyncrasy, that a solution to the problem or ones like it will result in increased understanding and operating effectiveness in the science, and that materials and tools of study exist and are adequate to the solution of the problem posed. Term papers should not be written on "Diplomatic Relations between Britain and America" but rather on "The Exchange of Official Correspondence between the British Foreign Office and the Department of State Pursuant to the Proposed Marshall Plan, 1947". They should not be entitled "Freedom of the Press in America" but rather something like "Bills under discussion in the 81th Congress relating to the regulation of Comic Books". This scientific modesty will be projected into later work and will stimulate the application of energies to more concrete and solvable problems.

Individual or Group Research

Research in politics, when performed by an individual suffers disadvantages and brings certain advantages. An individual is more responsible intellectually, often, can produce more internally consistent work, is free from social pressures to produce trite studies that conform to prejudices and can venture into the unexplored stretches of the field. He is limited often by not having access to restricted data, by his personal inabilities to cover a wide range of data thoroughly, by his ignorance of specialized techniques, and, in some cases, by the lack of prestige necessary to make his findings acceptable in the determination and execution of policy. These limitations encourage group research on certain problem areas. When official and unofficial organizations are already interested in a particular field, group research is indicated as being mutually advantageous.

We may list some of the organizations which have produced works in political science: Among official groups, one would have:

Congressional and legislative committees of investigation
Legislative councils
Executive-appointed and financed study groups
Joint Legislative-executive commissions
Budget bureau and departmental research
Planning Boards
Grand jury investigations

Among semi-official groups, one would have:

Various Committees of Associations of Public Officials
University-sponsored research
International Public and Private Organizations
Various Foundations

Among unofficial groups, one would have:

Civic Commissions of Inquiry into social conditions
Privately sponsored research bureaus: tax-payers' associations and the like

Opinion-polling institutes
Political Party, labor union, corporation, trade association research and information sections

Group research is growing. It is too early to determine what effects this will have on the development of political science. On the one hand one may perceive advantages to both the individual scientist and society; on the other hand one may foresee many problems concerning the "free spirit of inquiry" that will be raised where personnel are "hired" to do research, funds are organization controlled, the objectives of research are limited by non-scientific motives and the publication of findings are discretionary with the sponsoring or supporting group. Certainly in a field where policy must be made in reference to existing conditions, the survey, which gathers facts over a wide front with a view to making recommendations, is a splendid advance beyond using hunches or hearsay in arriving at important decisions.

Experimental Design

A great number of study problems in political science cannot be framed in the form of an experiment where a known and controlled situation is changed by the introduction of a known quantity of a new element, and the results recorded and checked by a repetition of the experiment. Social problems are most often too hot to handle in such fashion. In most cases, too, techniques for controlling the old and new elements, or of reproducing them in isolation, are absent. But wherever possible, a project will benefit by exact experimental design. Three notable techniques in social science design are mentioned below (p.). Where an experimental operating design is not possible, a logical conception of a projected study

is still essential before setting out on its path. Neither the paucity of data, nor the complexity of factors, nor the large scope of a project can excuse one from mapping and remapping the course to be followed. What is not known or knowable must yet be taken into account and described, rather than ignored or hidden.

1. Framing the Hypothesis. The hypothesis must be clear, precise and testable within the range and measuring of the expected evidence and analysis. Familiarity with the problem is presupposed, since the very ability to propose an hypothesis rests on experience and training in the subject matter. The model for much scientific work today involves the statement of the thing to be proved or disproved at the very beginning of the statement of the work. Literary style allows writers to embellish the hypothesis, to move it in its position in the final product, but never to destroy its essential position as the central theme of the study. Laying bare the hypothesis before beginning a study is modern science's way of avoiding confusion of thought and emotion.

2. Preliminary Relating of the Work to Pre-existing Studies. Like the drafting of the hypothesis, the proper relating of work to pre-existing studies is an accomplishment born of familiarity with the area of the study. A study is more useful when it connects in one or more directions with an existing state of knowledge. It not only then adds its own contribution but makes other contributions more meaningful and useful. If this and the foregoing demands are fulfilled, the "mere" delimitation of the object of study becomes a difficult but essential task. Yet, since the whole consequent operation is affected by it, the satisfaction of it gives greater promise to the end result.

3. Foresight into methodological possibilities and assurance of availability of data. The hypothesis should be framed with a view to the methods to be employed and the character of the data. A study of developing party strength in a particular city can hardly be attempted in the absence of election data of sufficient degree of minute breakdown and supporting data on population characteristics. Better to abandon such a study unless there is a great practical need for it.

4. Semantic Clearance of project. From the very beginnings of a study, semantic obstacles arise from the ambiguity and emotional loading of words. The hypothesis: "An educational test for voting increases intelligent voting and fosters good government" is semantically (and otherwise) most difficult to handle. First of all, we do not know exactly what is meant by "an educational test" and it would be safer to state more exactly what the test would be, i.e. of formal schooling, written examination, of aptitude or of knowledge of the Constitution, etc. More importantly we stumble on the word "intelligent" because although we have rough measures of intelligence, we very often cannot tell an "intelligent" from an "unintelligent" voter (save for the fact that the former always agrees with us). That is, the word "intelligent" is emotionally loaded, and so is the rest of the hypothesis. It is most doubtful whether anything scientific would come of such a naive hypothesis. For we cannot agree even on the first words used to describe the study.

Gathering of Data

Most of the collecting of facts used to support statements in

political science still takes place in the traditional ways. Primary and secondary or second-hand sources are fitted as best they can be to the hypothesis under consideration. Books, periodicals, private papers, laws, and personal experiences are used in providing the data to support the findings of a study. Intensive and extensive experience and reading form the preparation for drawing conclusions about the matters to which they relate.

1. Library and general sources. A large number of materials in political science are found in general sources and are frequently consulted by all kinds of political scientists and students of government. One may look in Laverne Burchfield's Students' Guide to Materials in Political Science for many of these. Every library has a central catalogue in which are contained by subject-matter, title and author all the books possessed by the library. That is a primary line of attack on any subject one may have in hand. Most libraries, however, are small in comparison with the Library of Congress, and, since the Library of Congress furnishes major libraries with a copy of each card in its catalogue, the next step would be to consult those cards. Card catalogues are really huge bibliographies. There are specialized bibliographies, however, which are generally in bound volumes and which often contain magazine or periodical references indexed by individual articles. Such would be the Union List of Serials, Poole's Index to Periodical Literature for 19th Century materials, the Reader's Index to Periodical Literature since 1896, The International Index to Periodicals, the Public Information Service, and, in special fields a large number of special bibliographies such as the Psychological Index, since 1894.

Then also, there are various national bibliographies, indexes to the book production of various countries and books about the countries in other languages. The Cumulative Book Index, 1928 and annually since then, supplies this need to a certain extent in the United States. In addition Sabin's Dictionary of Books Relating to America and Evan's bibliography of American books before 1800 are valuable sources of material. For contemporary materials one can consult the New York Times annual Index, the American Political Science Review and the American Economic Review. For newspaper materials not current there are several sources, American, English and French. Ayre's Newspaper Annual may be of some use as well as Winifred Gregory's American Newspapers, 1821-1936.

There are the yearbooks: Athena in England and, in the United States, the American Year Book, the World Almanac, the annual supplement to the Encyclopedia Britannica, American Labor Year Book, Social Work Year Book, the Municipal Yearbook, the Book of the States, and many others.

There are a number of good biographical sources too. Michaud's Biographie Universelle in 45 volumes, the Dictionary of American Biography which is the standard source of material on non-living Americans, the Dictionary of National Biography which is an exceedingly detailed English work in many volumes, the Dictionaire des Biographie Francaise and the Allgemeine Deutches Biographie, similar efforts on French and German personages.

Supplementing these are annuals of the type of Who's Who which are published in a number of countries and internationally. The French call their quis est vous, the Germans ver ist and the Italians chi é, and the best international one is the International Who's Who

which is a biannual publication.

In the encyclopedia field, the best aids to a student of political science is the Encyclopedia of the Social Sciences which is a magnificent work in 15 volumes with an index. If one is troubled by any of the many terms we use in this book and in any course, he may read further definitions of those terms in the **ESS**. Appended to each article is also a bibliography of works pertaining to the subject. Other encyclopedias are generally serviceable, the Encyclopedia Britannica, L'Encyclopedia Francaise, Enciclopedia Italiana, der Grosser Brockhaus or Enciclopedia Universale Illustrada.

Next we come to the various governmental publications which keep turning out in vast numbers each year. The United States Census, taken each 10 years, with frequent special supplements, is a general source of reliable demographic, economic and sociological information. Schmeckebier's book, Government Publications and their Uses, is the best work which tells how to make one's way through the maze of government documents. The laws passed during each session of Congress are contained in the United States Statutes at Large, all current laws in effect are contained in the Code of the Laws of the United States and its Supplements, and all orders and regulations of the various administrative branches of the government, whether the subject be tariffs, narcotics, alcohol, interstate commerce, communications or utilities regulations, are contained in the Federal Register as soon as they are promulgated. Each state ~~keeps~~ has its own code of statutes, ~~in force.~~ omit? For a collection of all the state constitutions ~~since~~ from the beginning of this country, one would go to Thorpe's The Federal and State Constitutions, Colonial Charters, down to the end of the last century

and other Organic Laws. In 1938, the New York constitutional convention gathered all existing constitutions and published them. For the congressional debates one would go to the Congressional Record which contains a day by day account of the occurrences and debates in the Congress. Each session is indexed afterwards. Both the House and Senate keep also a Journal, which is the official record of proceedings and actions.

Other nations follow similar methods of recording their own legislative debates and proceedings. Most American states publish journals but not the debates. Going behind the debates and the Congressional Record, one may find valuable material on the background of proposed legislation in the reports and hearings of the various House and Senate committees.

For the legal student, the course of research is well charted. United States Supreme Court decisions are always cited with the vol., then US, then the page number. The US refers to the official reports of the Supreme Court and this is the greatest source of constitutional law. The Circuit Courts of Appeals cases are reported in the Federal Reporter, together with its Supplements and the State Supreme Court cases may be found in the separate state reports which are put out like the US Supreme Court reports, and in addition the leading state cases may be found in regional collections, periodically issued, such as the Atlantic Reporter, the Northeastern Reporter, etc. A number of professional aids in the form of digests and interpretations are in common use.

The remaining major source of materials are the current specialized periodicals in the social sciences and especially in the political science. There were in 1945 a total of 516 American and foreign periodicals in social science, though the list grows or lessens as some are begun and old ones cease publication.

Double Space

AMERICAN AND FOREIGN PERIODICALS IN THE FIELD OF THE SOCIAL SCIENCES

Anthropology	41	Philosophy	18
Economics	78	Political Sci.	40
Education	48	Psychology	51
Geography	7	Sociology	59
History	34	Public Affairs	
Inter. Relations	31	General	75
Law	34		516

Among the more important professional periodicals for political scientists are:

For General Political Science

American Political Science Review
Annals of the American Academy of Political and Social Science
Cronache Sociali
Journal of Politics
National Municipal Review
~~Politica~~
Political Quarterly
Political Science Quarterly
Public Opinion Quarterly
Review of Politics
Revue politique et parlementaire
Social Research
Southwestern Political Science Quarterly

For International Affairs

American Journal of International Law
Annual Survey of Foreign Affairs
Foreign Affairs
International Affairs
International Organization
Revue de Droit Internationale

For Public Administration

Advanced Management
Good Government
Public Administration
Public Administration Review
Public Personnel Quarterly
Public Management
Revue Internationale des sciences administrative

Law Reviews and Legislation

American Labor Legislation Review
Columbia ~~University~~ Law Review
Harvard ~~University~~ Law Review
Journal of the Society of Comparative Legislation
Law and Contemporary Problems
Law Quarterly

ue
Revue d'histoire des Droit
State Government
University of Chicago Law Review
~~University of~~ Michigan Law Review — Minnesota Law Review
Yale ~~University~~ Law ~~Review~~ Journal
and many others

Miscellaneous but Pertinent

American Journal of Sociology
Ethics
Fortune
Human Relations
Journalism Quarterly — Journal of Political Economy
Journal of Social Issues
Nation
New Republic
New York Times
Psychiatry
Psychological Abstracts
Sociological Review
Yale Review

2. Direct Observation. Moving from the library to the experience itself, we find the observer noting the details of events in order to judge them later. A political demonstration, the behavior of ant colonies, a picket line in action, the crowd at a court trial, a leader making political or administrative decisions, children at play, a state legislature or city council in session, a bread line, a diplomatic conference--these and many more are situations providing rich material for the political scientist to cogitate upon and account for. Practically every research worker develops his own tricks of observation and notation of this type of event, ranging from a hopeful trust in the powers of recollection to the cleverest note-taking and sound-recording devices.

Personal Records. The more systematic or at least persistent efforts at describing observed events are those in a form that may be communicated and made a matter of record. Diaries, journals, logs, special notes and accounts, photographs, motion pictures,

diagrams, quantitative notations of gestures, handshakes, nervousness, random actions and innumerable other details of the events studied can be reflected upon at leisure and prod the memories of the scholar. By standardizing the form of ~~reporting~~ recording observations, much as the neophyte newspaper reporter is told to get the "Who, What, Where, When and How" of a story, cooperative research is made possible, and a rich assembly of data can be obtained in a form which may later be compared and analyzed.

Field Trips may be undertaken to view the objects of study recurrently or over an extended period of time, whether they be ward political meetings in Philadelphia, the daily life of a primitive tribe in Australia, the family structure in a Sardinian Village, or the personnel administration of the Tennessee Valley Authority. Among more famous trips, one might list such semi-official or official journeys as the "One-World" tour of Wendell Wilkie or General Marshall's trip to view American prospects of helping China. Field trips are common occurrence to administrative agencies, to legislators and to businessmen. Hardly a man would trust his own ability for experiencing things vicariously through books and accounts so far as to neglect work in the field.

3. Participant Observation. One of the prime difficulties of the direct observation technique of gathering data is the unusual position of the observer. The Russians are friendlier when Wilkie is around, the Chinese more efficient in the presence of Marshall; the Australian bushmen are self-conscious with ~~Malinowski~~ Malinowski, the Sardinian father not so patriarchal; "deals" are not so openly made in the ward meeting nor are problems of promotion and unionism in

the TVA much in evidence. The participant observer, however, becomes one of the group he is watching. The members think of him as one of them and behave as they would normally. His facilities for noting observations decline, though, for he must avoid detection. Special arrangements must then be made for taking down the facts for later study. There are obvious difficulties to becoming a participant observer in many cases: physical differences, security measures on the part of those observed, specialized skills of the group which cannot be acquired immediately, or the taking on of personal commitments to the groups by the observer which he cannot honestly fulfill. Nor is it unknown to have a participant observer become so attached or identified with the group under observation that his views and reports, not to mention his later findings, become warped.

4. Questionaires are formal, standardized groups of interrogations administered usually to groups, the size of which make certain operating economies necessary. One or a few persons may be interviewed. A larger number may better be asked to fill out questionaires. Benefits are also to be found in the controlled nature of the operation, since the respondent cannot "run away" with the discussion of the points on which information is sought. Being formal and standardized, the responses may be manipulated statistically and form the basis for tables, charts, percentages, etc. Questionaires do not require personal observation or person-to-person contact; they may be administered by mail, at group meetings or by canvassing (leaving the questionaires to be filled out and picked up later). A great many specific devices are available for

use in the construction of reliable and valid questionaires. Certain forms of factorial analysis have been developed which will often reduce a large number of questions to relatively few without losing substantial meaning and gaining the virtues of simplicity and greater cooperation from respondents.

5. Interviews are face-to-face communications in which the interviewer have overtly or covertly in mind to elicit of certain data from the interviewee. A great variety of interviews exist, as, e.g. a unique interview of a high official such as the widely publicized interviews of Stalin, scattered journalistic interrogations of "the man on the street", systematic but brief interviews of a sample of the population as in public opinion polls, complete interviews of a whole population (censuses), psychiatric interviews of a "depth" sort, or psychoanalytic interviews of a "free fantasy" or "free association" kind where the subject talks out whatever is in his mind.

Extensive interviews are those administered to a number of persons in limited and short form to gain rather specific facts about a social condition. The Crossley Radio Poll and the Gallup public opinion poll are examples of these. Critical points in interviewing are: The framing of the question, the social situation in which the two persons find themselves, the character of the respondent and the character of the interviewer. Unless great care is exercised in each aspect of the operation, the results of the short interview may not really conform to the attitudes or future behavior of the respondent. The interview then will have been a failure and all findings based on such interviews will be false except by accidant. The question must have meaning not only in relation to

the study but it must be meaningful and unambiguous to the respondent. It must not seem to suggest an answer, such as would the question: "Do you prefer Dewey or the more experienced Truman for President?" The social situation of the interview is important; it would not do for an interviewer dressed like a junior executive to ask a scrubwoman, trapped in the sacred precincts of a plush corporation office, what she thought about unionism. It is very difficult to engage the respondent under conditions very similar to those which will prevail when he makes the "real act", the prediction or analysis of which is the object of the interviewer. Yet that eventually "real situation", e.g. the neighborhood polling place, must be approximated somehow in order to establish the accuracy of the interview. Moreover, the character of the respondent is responsible for his acting differently if he perceives the interviewer to be a "strange" type or a "familiar" type, if he thinks he is expected to do one thing or another either to disagree or agree with the interviewer. The interviewer, himself, even though experienced, may have biases which cause him to select too many of one kind of person, to record reactions of the interviewees which he merely thinks he perceives, or to somehow hint subtly to the respondent what he thinks the answer ought to be. Taking into account these dangers, the extensive interview technique has achieved wide acceptance, and, especially when used with other techniques, has produced valid and reliable analyses and predictions.

Intensive interviews aim at a more profound plumbing of the genesis and developmental structure of attitudes. Seemingly "irrational" contradictions in the expressed attitudes of individuals may often be reduced to "rationality" on the more basic level of personality

population studies, voting behavior studies, studies of prices, wages, retail inventories, magazine and newspaper readership and many other areas, where the interview may be only of small importance, have been explored with the aid of sampling procedures. The "sample" is a selection of some of a population individuals who are to be subjects of a social inquiry. To the extent to which the procedures followed in making the selection produce an exactly representative miniature of the whole population being studied, the sample is a true one. Sampling is made necessary by the excessive costs of studying every individual in the large "populations" (i.e. pertinent study group) being observed. Involved may be audiences of mass media of communications like radio, industrial workers, cultural and nationality groups, economic classes, geographical groups and so on. Until the refinement of sampling procedures in the last generation, the behavior or attitudes of such groups could be accurately portrayed only by skilled, perceptive observers and their findings could hardly be corroborated by other scientists.

The methods which are most often used in obtaining samples are by asking for volunteers to be studied, by selecting names from a phone directory or other lists and either phoning or interviewing the sample elicited, and by sending interrogators to find a quota of people in certain areas or under certain conditions. Each method has its own perils and requires its own kind of precautions. We cannot discuss them in particular but rather will list several general principles which must be followed in order to design an efficient or true sample. First, the sample must be spread evenly throughout the population studied and should match its major

characteristics. It is not safe to believe the people on one street corner are typical of a whole city, or the people of Georgia typical of the whole Union. Secondly, the smallest unit that is economical should be selected in gathering the sample. The farmer rather than the farm cooperative association, the family rather than the welfare association or the town, the individual sometimes rather than the family, are surer base points of interrogation. Thirdly, sampling in levels or stages is more efficient. That is, the individuals chosen for questioning may be picked from different units: city blocks, census tracts units set up by the U.S. Census, villages, counties, families, individuals, etc. This gives a "crossing" of the population and catches more characteristics of the population. Finally, information about the "population" study which is already available from other sources, should guide the selection of the sample. Thus, knowing that one's income and education are indicators of one's political attitudes, the interviewer is told to obtain that proportion of respondents in his total interviews from each income and educational group that corresponds to the proportion of each income and educational group in the entire population. The latter figures are obtained from existing figures. Emphasis on this final technique, which places considerable responsibility on the interviewer, is called by the term "quota sampling". Emphasis on the first technique, which does the elaborate social analysis first and then sends out the interviewer simply to strike randomly within the units selected, and depends on probability theory for accurate results, is called "area sampling".

Other principles of sampling exist which cannot be summarized here. The theory of sampling is undergoing rapid development and

political studies using sampling techniques are on the increase. We can expect that any future political study requiring precise facts on the non-organizational aspects of large populations will normally turn to sampling technicians.

The Testing of the Data

Facts, far from being hard and fast, have a shadowy character about them. When their quality is coupled with the unreliable way they are handled and described so often, one must be sceptical of their validity until they are tested and demonstrated. What is true of facts is true of figures. For, as someone said, "Figures don't lie, but liars figure." Apart from the facts "in themselves", there is always the semantic question, which we must ask ourselves constantly: "Do we agree on the meaning of the terms which we use to describe facts which we seem to observe in the same way?"

1. Of documentary materials. The analysis of documents and records of the past requires tested data. Historiography has come a long way from the crude acceptances of legend and myth as facts, and from the use of a single untested document to demonstrate that a great event occurred in such and such a way. A number of auxiliary sciences were born out of the demand for reliable and valid data. Chronology, paleography, epigraphy, and lexicography are the principal ones. Associated with them are many specific and mechanical techniques for examining the origin, authorship, date, authority, diffusion and credibility of a document or record. Historical bibliography has assumed giant proportions and facilitates the quicker testing and placing of a new document into its context. Remarkably enough, the testing techniques of historical materials

are not often applied to very recent ones. Rather men abdicate, saying "We will leave the present to the verdict of history for we cannot judge events objectively". Those who benefit from the abdication, of course, are not future historians but today's opportunists. Today's events for the most part are treated journalistically and it is left for tomorrow's historians to rework them with the tools of historiography.

2. Of quantitative materials. Current materials very often are subject to historical tests or variations thereof. In addition, depending on the degree of quantification of the materials, they may be subjected to certain statistical tests.

Standardization. Semantic standardization is the most basic and needful of all, for without talking about facts in the same terms, two scientists can only accidentally agree on their findings. When talking of a "political machine" and saying that a "machine" may be found everywhere in politics, we must agree on what is meant by the term "political machine". Do we mean the sort of political organization that is found in the Republican Party in Philadelphia or do we mean in general Mosca's conception that a ruling group is in evidence everywhere in politics? So semantic standardization is a primary task. When dealing with raw figures, standardization again is necessary and certain techniques can advance standards to facilitate analysis. Thus the cost of government in a village in dollars from 1910 to 1920 is found to rise from $10,000 to $15,000. But the dollar itself has cheapened in value so that the increase is less than it seems. So a "weight" is devised. The dollar is worth 50% less in terms of the costs of government, salaries,

materials, etc., in 1929 than in 1910. Therefore the real cost of government is $15,000 X .50 = $7500. It has declined in fact. By achieving an index of the dollar related to what the dollar buys, the real nature in changes in cost of government may be appreciated.

Standardization of data has achieved a high place in statistics. A number of ways of analyzing succinctly the deviation of the data from the absolute form in which it is expressed,-e.g. a correlation, a frequency distribution, a trend,--have been developed, e.g. measures of dispersion such as the standard deviation, measures of skewness, and measures of regression. Standardization in testing, as for examinations to recruit personnel, is the ascertainment of the consistent dependability of the test in selecting the qualities desired.

Reliability has many meanings and many tests in science. In general, a reliable item, test, or statement describes accurately the object which it is supposed to describe time after time.

The validity of indices, items, tests, or statements, means their ability to associate very closely with the thing that they are describing, and not with some derivation, or secondary quality, or accidental experience of the thing.

Representativeness is an important concept in testing data, since, too often, an experienced observation is required to "stand for" non-experienced things with which it has little in common. The problem of representative data runs through the whole scientific process, and has greatest importance perhaps, in the transference or combination of findings from one area to another. It is especially manifest in the techniques and problems of sampling where its quantitative statement is most precise.

The Control of Data

A standard against which to set one's data is most useful, for it helps indicate the intrusion of extraneous elements into the data picture and helps measure the changes in the data being operated on in the studied situation. A number of statistical tests may be applied to a body of data to determine its character. These are, like any logical rechecking of observations, a form of control. But special mention is due those growing number of instances in which human scientists can establish experimental control over the study situation.

Experiments in group dynamics have been performed by Kurt Lewin, Lippett, Roethlisberger, Moreno, and others on small groups to test certain hypotheses regarding political behavior. Thus one Lippett experiment placed a play group under controlled study conditions and injected into the situation authoritarian and democratic types of leadership. The creativeness and behavior manifestations of members of the group, then and later, were observed and described. An increase in external aggression and internal passivity were noted in the authoritarian situation, for example. A third type of situation was described as well, in which the group had no leadership but a laissez-faire policy existed. Here again creativeness was somewhat low and anxiety was manifested. Such a study has the merits of allowing disciplined observation and recording, and repetition. It has the demerit of being possible thus far only in limited situations and small groups.

Field controls: Carrying the experimental method into the field of 'natural', 'real' behavior has been possible in some instances. In one type of study, two groups of maximum identical characteristics except

for one difference are compared to find the results of the difference. A simple example of this technique is to be found in Merriam and Gosnell's Non-Voting (1924) in which the authors at one point compared voters and non-voters of the same race and national origin and of the same length of residence in Cook County. A second technique of experiment is to subject two groups of maximum identical characteristics to a deliberate infusion of a new element in order to find out the effects of the new element. This was done by Gosnell in Getting Out the Vote. He selected two very similar neighborhoods and covered one with literature exhorting the residents to vote. The residents definitely reacted, turning out at the polls in larger numbers than in the controlled district. A third technique, which Chapin and Greenwood call the ex post facto design, is aimed at studying past events; an event of hypothetical importance is designated as the independent variable, and a dependent variable, relating to behavior over the whole span of time studied, is related to it. This is a classic historical technique that has wide possibilities in all the social sciences. Thus, the "trauma" in psychoanalysis is that shocking experience (independent variable) of the past in the light of which the pre-history and post-history of a neurosis may be viewed. The death of a ruler, a great military defeat or victory (Ticonderoga, Waterloo, Stalingrad, or Battle of the Ardennes), an election, a constitutional amendment and other striking and presumably important historical event may be taken as the independent variable and pre-events and post-events studied in relation to it. Another general example would be Thomas' study of The House of Commons, 1832-1901 which depicted the changes in the

occupational composition in the House following the Great Reform Bill of 1832. A continual decrease in landed as against commerical--manufacturing representation ensued after 1832.

The Analysis of Data

It would be naive to assume that, in all the manipulations of observations or data described, analysis is in abeyance. Analysis goes on consciously and unconsciously throughout the scientific process. At a later stage of the investigation, however, the analytic process increases in consciousness and intensity. Having gathered a tested body of observations, it remains to present them in useful form and analyze their meaning.

1. Pre-analytic Presentations. Historians, working with voluminous notes, have devised many neat techniques for arranging and sorting their data so that they will be useful for purposes of analysis. The object of such pre-analytic presentation is to "boil down" and "put into form" the data so that the mental effort required at their analysis will be least difficult. Exploring developments in this field of mechanical contrivances will save very often a large amount of work. The Hollerith Card, an invention 60 years old, has greatly facilitated many kinds of research in the social sciences. A large number of items with several categories to each item may be assigned code numbers printed on the card. Holes are punched on the appropriate numbers, and a machine thereafter may be used to separate cards of a particular number or combination of numbers from all the rest. Of course, the very act of setting up the item categories is analytic, but the final analysis using the machine's selective capacities is the analysis that determines whether a finding may or may not be drawn from the data.

Tabulations allow some saving of time and aid to analysis by grouping data of a quantitative sort into logical, meaningful categories. Tables of figures have become commonplace in recent years. (see fig. a) They are most effective when the categories are sharp and distinct, the total categories few in number, the figures not too large to be comprehended. Often, the reduction of raw figures to percentages facilitates comparisons and comprehension.

Graphs show trends better than tables do. They are quickly comprehended and that data may be viewed as a whole. Kinds of graphs, in addition to the traditional ordinary method, are the pie chart, (see fig. x) bar chart, (see figure y) and curve graph. (see fig. 3) In the description of organizations, frequent recourse is made to organization structure charts, showing the main departments and units and the lives of command, (see fig. 4) and flow charts (see fig. c) picturing the flow of work of different kinds from the entrance of a task into the organization through its passage from one office to another, to its final completion or exit from the organization dockets. Maps may prove valuable in ecological analyses of communities, in depicting the relationship of nations, resources, physical conditions, etc. spatially. A number of graphic devices using maps and graphs together have been devised.

Frequency Distributions are tabulations or graphings of data based on some selected class interval. (see fig. d) Such would be a classification of cities at intervals of 5000 population and the noting within each interval the number of names of the cities within its 5000 person range. The essential logical task in a good presentation of a frequency distribution is the selection of just the right class interval to mean the most for analysis.

2. Indicating the tendencies of Data. For abstracting the direction of a body of data, the foregoing and several other statistical computations and concepts are in frequent use in political studies. The Arithmetic Mean or Average is the sum of a set of items divided by their number. The Median is the value in a series of items above and below which fall half the values in the series. The Mode is a statistical expression of the often viewed tendency of data or items to cluster preponderantly on one side or the other of the arithmetic mean. Where there are two concentrations of data, a distribution is bimodal instead of uni-modal. The use of these terms is common enough in political science at an elementary level to require familiarity with them. Other types of averages and tendencies may be explained, as the occasion arises, from a number of different statistical handbooks. Perhaps the most useful of the more technical expressions not here explained would be the Standard Deviation (σ) and the variance (σ^2) which are to be obtained by the formula: $\sigma^2 = \frac{\Sigma f_1 (x_1 - A)^2}{N}$. The standard deviation is a useful index of how widely scattered the data are from the arithmetic mean. It is a test of the cohesion of the data as well as a description of their general tendency.

3. Correlations. A basic element in analysis is the relation of one variable to another. By a variable is meant a quantity which under the conditions of the problem studied may assume different values. Thus in a study of non-voting in a city, the extent of non-voting in the different wards of the city will be variable, high in one ward, lower in another. The task is to find out what relation non-voting has to educational status (grade school - high school -

college). So a second variable, amount of education, is tabulated for the various wards of the city. A simple table may reveal that wards with high voting show high education, so that we might state that a positive relationship exists between voting and education. A coefficient of correlation may be used to state the relationship, not ward by ward, but over the whole city. This requires the mathematical statement of the total picture had by the plotting of voting-education in each ward on graph paper (a scatter-diagram). The formula resulting is presented here without explanation of its elements: $r = \frac{S(xy)}{\sqrt{S(x^2)\,S(y^2)}}$ The (r) may be positive or negative and is never more than plus or minus 1. In Gosnell's study of Machine Politics: Chicago Model, he found a simple coefficient of correlation of .X between voting and education. By the use of more refined techniques of partial correlation, which hold constant (i.e. get rid of the influence of the variations in other variables such as religion and economic status, this figure was changed to .X. Coefficients of correlation or partial correlation are by no means to be taken at face value. A very high correlation may be deceitful unless one knows the character of the regression equation which represents the relationship of the variables in another manner, so that it may again be checked. Thus the coefficient of correlation between the Literary Digest Presidential Election Poll of 1936 and the final election results was.91. But the poll failed completely in predicting the outcome of the election. The failure lay in the fact that variations one way were compensated for by variations in the other way. This unrealistic cancelling out of errors was concealed in the simple coefficient. The regression equation or the application of partial

correlations would reveal the deceptive process which was occurring and would indicate what everyone knew later to be the case, namely that the poll had failed.

Factor Analysis. When the number of variables one has to deal with are too many (e.g. when some twenty or thirty factors are important in explaining why people vote), Thurstone's factor analysis technique may prove useful. A correlation matrix is made of all the variables with each other. This is a rectangular table, much like a common baseball league standing score or a city-to-city automobile distance chart, with each correlation related to every other. When each correlation is plotted on a spheroid in its relation with every other correlation, like variables will cluster together, separate from unlike clusters of variables. By calling the centroid or central tendency of each cluster by some name, that name will represent a more basic factor in which each variable of the cluster participates. Thus many variables may be reduced to few, and more easily handled statistically and more readily conceived of.

4. Logical Sorting. We mean by logical sorting the refined logical statement of the data studied in a precise manner through the use primarily of prose language. The Hollerith card and other techniques already mentioned are examples of analytic or logical categorizations of data to test hypotheses. We wish to mention two other general techniques which have received some degree of sophisticated development in political science.

Ideal-types are isolates of groups of characteristics relating to behavior. Thus Mannheim sets up the chiliastic, liberal-

humanitariam, conservative and socialist-communistic types of mentality and value-systems. Assuming the completeness and essential meaning of his categories, the task of classifying many details of behavior is simplified, for the scientist has a preconception of the limits and categories into which all data concerning wishes, knowledge, and forms of thought can be fitted.

Stereotypes are the ideal-types of the man on the street. Reasoning crudely and with insufficient evidence very often, he believes that certain classes or types exist into which he may fit all experience relating to the subject to which the stereotype refers. Thus there are a wide variety of beliefs, wishes, etc. centered around stereotypes such as "idealist", "brain-truster", "democrat", "foreigner", "city-slicker", or "union organizer". The stereotyped thinker, as Lippmann so well describes him, acting on hunches, tends to place all data into these ~~interested~~ untested, evaluational categories and behaves as if they were complete and true pictures of reality. The distortion of the world that results is enormous. The ideal-type or ideological type, as an analytic tool, may sometimes degenerate into a stereotype when wishes, thought and evidence are not strictly controlled. The ideal-type describes values but does not contain them. It is a way of classifying dominant currents of thought and behavior. In our present state of knowledge, they are most tenative categories, subject to constant reformulation and clarification, as new evidence comes in.

Content-Analysis or "quantitative semantics", as Lasswell and Leites call it, is a technique for the description and classification of spoken, written and other communications according to stipulated rules of procedure. It is useful in describing the relations of the

propagandist, political leader, government, press, etc. to the things which they say. It is also useful in describing the relations of the audience (public, army, workers, etc.) to the communications which they receive. Thus a very early study by Willcox (1900) classified the contents of 240 newspapers by topics and column inches devoted to them. Schuyler Foster examined the treatment of European War news in the New York Times, 1914-8, in tabular and graphical form, and could show that the crisis just before United States intervention was the last in a series of crises of ever-increasing intensity. Berelson and DeGrazia, in World War II, analyzed the contents of Radio Rome and Radio Berlin and found evidence of a lack of collaboration or unified direction of these twin Axis centers of war propaganda. Content analysis also has proved useful in analyses of the cohesion of domestic Communist Parties and the Communist Third International, analyses of trends in kinds of propaganda, the "concealment" in news reports of preferences and biases, and the discernment of what political parties and leaders are worried about (but do not reveal openly) through what they say. Content analysis has several scientific advantages and disadvantages. It is of course a limited tool, the data are often too scanty and the intensity of words when used by one man are not the same as when used by another (cf. e.g. Aneurin ~~American~~ Bevan with Clement Atlee as British Labor Party spokesmen, the first fiery, the second soft-spoken and understating). On the other hand, more subtle trends can be observed than would be revealed by general reading and judgements, and validity can be increased by several observers sorting the same materials into the same body of content categories.

5. Scaling. A scale is a measure of certain characteristics of personality or behavior. It is a continuum, the standard points on which have been developed by applying the criteria of the scale to one group. Its primary function, apart from relating the members of the group to each other along the continuum, is to test easily and meaningfully the presence of the same characteristics in other groups. A valid, reliable and standardized test developed through constant experimentation on one group can be administered in the form of a questionaire to an unknown group and will indicate the existence to a precise extent of the characteristics being sought. The "unknown" group will then be "scaled", that is, "known", as to the aimed-at criteria. Scaling is frequently used in job-analysis, personnel analysis and attitude analysis.

Rechecking the Analysis

At no point in a study can one rest satisfied that all has been included and properly represented or weighed. It is safest to use as many techniques and methods as possible to recheck the data and the analysis. "In numbers there is strength" in scientific study. Recurrent review of the work from its hypothesis on up is in order. The use of other observers to give objectivity is equally useful in all stages of the study and should not be restricted to the final review or criticism of outsiders. By then irreparable damage may be done. Moreover, the chances of intelligent criticism from the outside are smaller than on-the-spot criticism. Progress reports and operational journals, and interviews may be useful means of checking back. Notes may be restudied, inspections invited, and sample operations typical of early parts of the study may be reenacted on the basis of ex post facto criticism.

Communication of the Findings

The final product of scientific study usually takes the form of a book, article or paper describing the objects of study, the operations undergone and the findings. Often the writer takes occasion to indicate the relationship of his findings to existing findings in the same general area of science.

1. Internal conditions. The character of the report has effects on its reception by other scientists and the other groups at whom it is directed. In any event, semantic and logical clarity is a paramount requirement. Science must be communicable in order to spread. Precision in the statement of hypotheses, of the exact steps in the gathering of evidence, of the sources of every statement that does not proceed directly from the operation being described, and the exact confinement of the findings to what was actually "found" are the traits of a proper report. Even the elementary student of political science will be struck by the absence of such high standards in many cases, or at least he will have difficulty in perceiving whether those standards are absent or present, so diverse and many are the styles, languages, methods, and materials of political science. But he must also realize that the very general interest in problems of political science in a democracy is partly responsible for the absence of standards. "Everyone wants to get into the act". And rather than be dismayed by the vast disarray of the field, he ought rather to learn to pick his way patiently through it with the highest of scientific standards in mind.

2. External conditions. With varying degrees of reliability, the professional publications in political science furnish guidance

to the quality of current output. Achievement of publication in one of them is presumptive evidence that a study may be valuable. Favorable book reviews by authorities within the field must be taken as another indication of the possibility that a work may be worth consulting. But these are fallible criteria of value and are not final. There is lacking a universal standard of professional excellence and character in all of the social sciences. Yet, considering the profusion of values, viewpoints, materials, etc., any attempt to make rigid professional requirements in the social sciences might well boomerang into a repressive, unscientific fashioning of the fields by a controlling clique of self-constituted "social scientists". The present free outpouring of all sorts of scientific and pseudo-scientific reports is a better way of allowing scientific advance than some code of procedures and study devised by a special group.

Coordination of Findings

In the gathering together of findings, political science is backwards. Although he will admit the absolute necessity of bold hypothesis even in areas of limited evidence, the individual scientist is reluctant to trust himself to the mercies of his colleagues and public. He very often prefers to confine his professional life solely to reiteration of what others say are their findings, absolving himself explicitly of complicity therewith. The discipline, in America especially, resembles a port that is tied up by a strike of the stevedores. The data and detailed findings pile up in huge heaps, but no one is around to carry it off and distribute it where it belongs. Yet the collection and

distribution will not take care of itself. The world of data does not part itself neatly and fall into place. A lot of intellectual sweat must go into the job. And if the political scientists do not respond, society must still make decisions and will allow strike-breakers in the form of stereotyped thinkers, "hunch" specialists, and public relations quacks to move in and take over. We would say, then, that the task of gathering together, analyzing and reporting on larger sections of the materials of politics is a responsibility the political scientist cannot ignore. Theoretical and systematic works of the type of John Dewey's The Public and Its Problems, Jean Stoetzel's Theorie des Opinions, Charles Merriam's Systematic Politics, and Lasswell's Power and Personality are very much in order. They pre-digest for us great masses of materials and show us how to go on from there.