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TRENDS AND ISSUES IN AMERICAN POLITICAL SCIENCE ¹

by

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For fully a generation political science as an academic speciality has undergone a continual self-appraisal in the United States ². The principal product of this introspection has been the “behavioral” movement. Although the label implies that the behavior of politicians is the object of political analysis (as distinguished from the form or organization of governmental institutions), that is only one of the significant features of the “behavioral approach”. At least three other tendencies also characterize “the behavioral persuasion” ³ — tendencies to be *inter-disciplinary*, to be *quantitative*, and to be *scientific*. These characteristics are not unique to behavioral innovations, but their applications clearly distinguish behavioral from “traditional” or “institutional” studies.

The Behavioral Persuasion

As an academic subject, American political science emerged at the beginning of the twentieth century.⁴ From its inception, the field was intimately associated with other disciplines, especially with philosophy, law, and economics. During the first half of the century, philosophic interests remained prominent among political scientists. Goals of public policy, rules of political conduct, and ideal forms of political institutions were recurrently discussed in normative terms. Often these subjects were

¹ Parts of this essay are adapted from the author's contribution to *Political Science in the Social Studies*, Thirty-Sixth Yearbook of the National Council for the Social Studies, Washington, D.C., 1966.

² One who wishes to follow the main themes of this academic selfcriticism can do so by consulting DAVID EASTON, *The Political System*, New York, Alfred A. Knopf, 1953; DWIGHT WALDO, *Political Science in the United States*, Paris, UNESCO, 1956; CHARLES S. HYNEMAN, *The Study of Politics*, Urbana, Ill., University of Illinois Press, 1959; HAROLD D. LASSWELL, *The Future of Political Science*, New York, Atherton, 1963; and ALBERT SOMIT and JOSEPH TANENHAUS, *Profile of a Discipline: The American Political Science Association*, New York, Atherton, 1964.

³ The title of Heinz Eulau's succinct resumé of the modern developments in the field: HEINZ EULAU, *The Behavioral Persuasion in Politics*, New York, Random House, 1963.

⁴ Historical accounts are provided by ANNA HADDOW, *Political Science in American Colleges, 1636-1900*, New York, D. Appleton-Century, 1939; LASSWELL, *op. cit.*, pp. 30-38; and ALBERT SOMIT and JOSEPH TANENHAUS, *The Development of Political Science: From Burgess to Behaviorism*, Boston, Allyn and Bacon, 1967.

treated historically, and one whose subject of research and teaching was political philosophy usually engaged in reconstructing and reinterpreting the history of political thought. Legal studies also were important. Virtually no member of a political science faculty lacked training in American constitutional law and in some particular aspects of "public law," that is, public policy as expressed through judicial decisions (e.g., due process, civil rights, labor). Although many political scientists took special interest in economics and in the relations between government and commerce, they were not as numerous as those who adhered to the philosophic and legal traditions. The nineteenth century term "political economy" rarely became firmly identified with academic departments or curricula.

About 1920 efforts were made to broaden the descriptive work of the field, as pioneered in legal studies, to include other features of the conduct of government. As a result, sociological, psychological, and occasionally anthropological data assumed relevance. Elections, voting, political parties, courts, legislatures, and administrative bureaus were subjects for realistic description. Professor Charles Merriam, chairman of the department of political science at the University of Chicago and an inveterate innovator, championed new directions, and through his institutional and organizational initiatives, influenced trends among the next two generations of political scientists¹. For a few years in the late 1920's and early 1930's, political analysis was infused with quantification, but this tendency lapsed temporarily, and some statistical studies in which political scientists had pioneered were taken up by other social sciences, which simultaneously were influenced also by quantitative analysis. For example, public opinion, initially a subject primarily within the domain of political scientists, came to be a province of psychologists and sociologists.

By the end of World War II, however, interest in quantification was revived among American political scientists, and many of the revivalists were Merriam's former students. Electoral voting and legislative roll calls, to which quantitative analyses were readily applied, furnished an impressive source for statistical research. These were, however, the most accessible political data subject to treatment by technical, empirical inventions. Mail questionnaires, field interviews, panel interviews, punch card data processing, controlled experiments, content analysis, attitude scaling, and sample surveys were introduced to political analysis within a single decade. They have been refined and more widely adopted since. Their use now extends to virtually every topic conventionally accepted as part of political science — international relations, comparative politics, national government, state and

¹ Merriam's style and contributions are made evident in LEONARD D. WHITE, *The Future of Government in the United States*, Chicago, University of Chicago Press, 1942 (see especially the first chapter—an autobiography by Merriam); and in Lasswell's appreciative introduction to MERRIAM, *Political Power*, New York, Collier Books, 1964, pp. 7-14. See also the entry in *International Encyclopedia of the Social Sciences*, New York, Macmillan and Free Press, 1968.

local politics, public administration, political parties, public opinion, legislatures, and courts.

Owing to the sheer volume of quantitative political science, one might easily overestimate the importance of statistical work in political studies. More important than quantification is the effort to make statements about political activity that can be tested with data, i.e., for which factual evidence could be gathered to confirm or disconfirm the statements. Still *more* important is the modern theoretical concern for relating empirical propositions (which could be tested factually) to each other in logical form. Statistical devices are prominent in testing empirical statements and in validating theory, but by themselves such techniques would be regarded as a new form of an old practice, "brute empiricism" or "hyperfactualism". Later mathematics has served in formulating deductive theories, but like statistics, it is only a technical handmaiden to the behavioral persuasion's preference for testable theories. It is this change in the mode of thought, the increase in attention to theory and to the making and testing of empirical propositions, that marks the most important development in the evolution of political analysis.

This reorientation was not without controversy. Frequently the debate cast "traditionalists" or "institutionalists" against "behavioralists," an *ancien regime* against an *avant garde*¹. Such polarizing was, in my view, inaccurate, although both "sides" often treated it as a reasonably genuine formulation of differences in style and purpose. Much of what was regarded as "behavioral" was not "behavior" but "attitudinal," and much of what was scientific (i.e., theoretical *and* testable) was not behavioral. In addition to inaccurately representing the issues, this polarizing unfortunately obscured the real, and more significant, revolution in political thought, i.e., the reformulation of statements, the new theoretical style and empirical language. Contrary to some polemical expressions, the works of many institutionalists are not irrelevant for a modern political science; their concerns are the classical and important problems that have occupied scholars from Aristotle to Marx. Contrary to other equally polemical expressions, the modern behavioral emphasis has not been irrelevant to classical and traditional subjects. That the new trends emphasize the separation of factual and value statements does not mean that the behaviorally oriented scholars are unconcerned with values. Students of the social and economic conditions for democracy, for example, empirically search for factors associated with democracy, rather than assume their association. Frequently values lead behaviorally inclined scholars to problems, which they formulate empirically, in order to obtain more reliable knowledge to pursue their values through social action. Studies of racial inequality in America, of "the authoritarian personality," and of civil liberties, conformity, and communism are examples of value

¹ A serious and valuable critique of behavioral emphases in American political science that did not oversimplify the central philosophic issues was assembled by HERBERT S. STORING (ed.), *Essays on the Scientific Study of Politics*, New York, Holt, Rinehart and Winston, 1962.

problems investigated empirically. Furthermore, problems of values sometimes can be formulated in a series of means-ends statements, so that the empirical content of value studies is enlarged.

The emphasis on "science" in "political science" came largely from scholars associated with the behavioral persuasion. The adaptation of scientific objectives from the natural to the behavioral sciences raised some simple but profound issues that have not been confined to hothouse argumentation. "Science" and/or "art" is a world cultural issue, popularized by such eminent and popular pamphleteers as C. P. Snow and Jacob Bronowski¹.

The art versus science issue in political behavior has been confused when distinctions between *practice* and *theory* have not been made. The practice of politics—including decisionmaking in campaigns or in office when uncertainty is high, the introduction of new styles in official conduct, etc.—is every bit as much an art as a concert performance or a gallery exhibition. Political experience may sharpen one's decisionmaking skills, as years of devoted practice may make one an accomplished pianist. No amount of technical studies of decisionmaking or of musical criticism, however, can displace the artistic individuality of either the politician or the musician. Presumably "scientific" research has relevance for political practice, but it is a different activity to be judged by different rules.

Confusion also has arisen from uninformed conceptions of disciplines as either scientific or unscientific. Some subjects are more scientific than others, depending on to which the methods of science were first applied and depending also on the tractability of the subject matter. Every scientific field passes through its own stages of development. It is unlikely that one can find a science in which at some time influential persons have not denied the possibilities of systematic study.

It is inappropriate to compare the modern state of knowledge about politics with the modern state of knowledge about physics. Much more appropriate would be a comparison of what is known about political behavior now with what was known about physics in, say, 1500. Talk about a science of politics is much, much older than efforts to undertake scientific researches². The amount of effort that has been invested in the genuinely scientific study of politics is relatively recent in origin and remarkably slender in output. The humbling comparisons of resources devoted to earth sciences, even space sciences, and the sciences of man suggest that it is much too soon to be confident that politics is, or is not, amenable to scientific investigations.

Not only is political behavior a recent science, it is an especially complicated one. Albert Einstein is said to have remarked that politics is intrinsically

¹ C. P. SNOW, *The Two Cultures*, New York, New American Library, 1964, is more widely known, but JACOB BRONOWSKI, *Science and Human Values*, New York, Harper and Row, 1964, is an artful and learned discussion of the mutual interests of art and science.

² For some examples, see JAMES A. ROBINSON, "Newtonianism and the Constitution," *Midwest Journal of Political Science*, Vol. 1, 1957, pp. 252-266.

a more difficult subject than physics. The number of variables that affect political behavior may well be larger than those that regulate the planets. And the difficulties of undertaking controlled experiments, while neither unsurmountable nor unique to social sciences, are considerable¹. Moreover, that universal tool of science, mathematics, has unusual limitations when applied to social and political behavior. Although the calculus expresses certain physical and social laws in strikingly similar formulas, the "new math" of set theory is likely to have much greater use for social science. Indeed, the next revolution in mathematics may be a response to the challenge of and need for tools to handle social phenomena of which political behavior is one important aspect².

Mathematics and Politics

Because of the prospective importance of mathematics in political science, it is appropriate to illustrate current work in some detail. As often happens with academic innovations, specialized applications appear first and are followed by systematic texts and other instructional materials. This pattern of diffusion of mathematical influence in political analysis may easily be observed in recent publications.

Four essays circulated to a National Science Foundation conference on uses of mathematics in political analysis indicate something about the range of mathematical possibilities³. The kinds of mathematics, the strategies for using them, and the substantive applications demonstrate that mathematical analysis takes many forms indeed. S. Sidney Ulmer uses stochastic process models to describe or summarize Supreme Court decisions, Senate roll calls, and state electoral returns. Harold Guetzkow recalls how he and his colleagues, in inventing Inter-Nation Simulation, converted their assumptions about processes of international politics to arithmetical statements. (This paper, incidentally, is valuable for its description of choices and compromises that scholars inevitably must make in the early stages of their research, but that are rarely reported in their completed work.) William H. Riker, in the mathematically most elegant of these chapters, shows the deductive prowess of set theory applied to "the paradox of voting," or decisionmaking, in legislatures or committees and finds data consistent with the deductions. Donald E. Stokes describes a statistical rather than a mathematical model adopted to fit data about the relationship of publics to representation in Congress.

¹ DONALD T. CAMPBELL and JULIAN C. STANLEY, *Experimental and Quasi-Experimental Designs for Research*, Chicago, Rand McNally, 1966.

² On the necessity for the invention of new mathematics for social science, see JOHN G. KEMENY and J. LAURIE SNELL, *Mathematical Models in the Social Sciences*, New York, Blaisdell, 1962, pp. 6-8.

³ JOHN M. CLAUNCH (ed.), *Mathematical Applications in Political Science*, Dallas, Tex., The Arnold Foundation, 1965. The variety of subjects and problems to which mathematics may be applied is considerable. Other examples are put forward in GORDON TULLOCK, *Toward a Mathematics of Politics*, Ann Arbor, Mich., University of Michigan Press, 1967.

Mathematical applications vary, it hardly need be said, from the simple to the elegant. Guetzkow's efforts are quite elementary; they can be appreciated by non-mathematical readers interested in international relations. His work illustrates initial steps in building descriptive models for either formal theory or simulations. Ulmer's contribution is notable for its application of Markov chain processes to judicial, legislative, and election statistics. Stokes' chapter, more technical than Ulmer's, exemplifies the strategy of looking for a statistical model (in this case a "variance component" model) with which certain political data correspond. Avowedly, it is not predictive or explanatory. It briefly notes an alternative model that was cast aside because it did not fit the data as well as the researchers desired.

Riker's use of mathematics contrasts sharply with that of Ulmer and Stokes. His is deductive; theirs, inductive. Riker predicts the inevitability of "cyclical majorities," given certain requirements in voting. Data are sought to illustrate or confirm the prediction. Ulmer and Stokes, in contrast, do not predict, but rather search for mathematical or statistical models to which their data conform.

The contributions to political theory differ also. Riker's deductive strategy leads more directly to basic political theory-building and hypothesis-testing. Ulmer's and Stokes' inductive strategy is a step less close to political theory, but it holds promise that abstract mathematical models such as Markov chains and the variance component model may fit political data as well as other kinds of data. As classical mathematics was discovered to fit such varied phenomena as gravity, diffusion rates, and arms races, so newer mathematics have a relevance quite apart from the data for which they were originally invented.

Excellent texts by social and political scientists are now available for instruction in mathematics and the social sciences in anticipation of university courses that probably will be widely offered within a decade. Until recently few basic texts, with the exception of Kemeny, Snell, and Thompson's *Finite Mathematics*¹, served the needs of social science departments aspiring to introduce students to mathematical applications. Kemeny, Snell, and Thompson suffered from important limitations: it was written by mathematicians, most of its illustrations and applications were not taken from social science, and it was confined to "newer" math to the exclusion of extensive applications of the calculus to certain social phenomena. New texts by Alker, by McGinnis, and by Coleman have made it possible to speed up the attainment of mathematical literacy and competence among political scientists in ways that have not heretofore been possible.²

¹ JOHN G. KEMENY, J. LAURIE SNELL and G. L. THOMPSON, *Introduction to Finite Mathematics*, Englewood Cliffs, N. J., Prentice-Hall, 1957.

² HAYWARD ALKER JR., *Mathematics and Politics*, New York, Macmillan, 1965; ROBERT MCGINNIS, *Mathematical Foundations for Social Analysis*, New York and Indianapolis, Bobbs-Merrill, 1964; JAMES S. COLEMAN, *Introduction to Mathematical Sociology*, New York, Free Press of Glencoe, Inc., 1964.

Alker's book is the place to begin. It is a short, readable survey of the major themes in mathematical political science. The uses of math are briefly treated. Problems of measurement, especially of inequality, are introduced. Bivariate, multivariate, correlation, and causal analyses are separately discussed. Normative and judgmental applications are illustrated. Throughout, Alker relies on classical political sources as illustrations, foils, and strawmen, thus planting his effort squarely in the mainstream of the history of political science.

McGinnis is sophisticated, advanced, and difficult for the beginner. Only a brief introduction precedes a plunge into the theory of sets and relations. Sections that follow emphasize numbers (integers, real numbers, and matrices of numbers), functions (on integers, real functions, and measurement of functions and classes of numbers), and measures of change and stability (this section requires calculus).

McGinnis' volume is a how-to-do-it manual, but not of the simple "cookbook" class. This book teaches mathematics, its tools and techniques. Although examples and problems are from the social sciences, they are not closely tied to the writings on math and social science. Coleman's book, on the other hand, is securely anchored in sociological uses of mathematics, including applications to longitudinal data, various processes associated with equilibrium analyses, contagion models, and attitudinal structures.

Most of McGinnis is "new" math. Coleman stresses classical mathematics; the calculus is a prerequisite to a reasonable appreciation of the whole text. Coleman and Alker also include helpful sections on the strategies and timing for adopting mathematics in social research.

With these materials and the courses they are inspiring, three audiences are being reached. First, established political scientists, who will not use much math in their own research, are able to read, comprehend, and criticize the growing number of mathematical applications. These scholars will be able to distinguish fads from genuinely creative work and also nurse the next generation of political scientists through a mathematical revolution. Second, nonquantitative-minded new political scientists are becoming well enough grounded in math not to be dismayed by their mathematical peers. Thus, political scientists of all varieties can communicate with each other, a reasonably probable guarantee against a rupture between traditional political problems and new and quantitative techniques. And third, those who enjoy both politics and mathematical order are encouraged and educated within political science. As a consequence of the impact on these three sets of political scholars, we may eventually regard the appearance of these books and the studies they inspire as a turning point in the history of political theory and research.

In recent years the controversy over science in politics has withered¹.

¹ ROBERT A. DAHL, "The Behavioral Approach in Political Science: Epitaph for a Monument to a Successful Protest," *American Political Science Review*, Vol. 55, 1961, pp. 763-772.

Many graduate curricula for the Ph. D. have been revised to include more statistical training and experience with empirical techniques¹ as well as education in the philosophy of science and in the philosophy of social science. More recently mathematics, as distinguished from statistics, has become useful to political theory. These perspectives are now added to the older interests in philosophy and law and to the realistic descriptions of political activity.

Studies of the Future

Political science in the United States has passed from descriptive accounts to theoretical and empirical studies of historical and contemporary institutions and processes. The next stage in the development of a science of politics, I venture to predict, will be a major reorientation from concern with the past and present to concern for the future, for alternative policies of public action, and for alternative forms of policymaking processes. The beginnings of the shift in major occupations is already evident. Acceleration in efforts and radical improvements and invention in methodologies may be confidently predicted.

The philosophic underpinnings of a future-oriented political science have been provided better by Europeans than by American political scientists. I refer particularly to the formulations of Bertrand de Jouvenel as set forth in *The Art of Conjecture*². The range of knowledge upon which de Jouvenel draws embraces almost all domains of inquiry. From an encyclopedic acquaintance with classical, historical, and contemporary scholarship, the author illustrates the major methodological problems involved in efforts to anticipate futures.

De Jouvenel's objective is nothing less than the reorientation of modern political science. Together with a small (but, I sense, growing) coterie of political scientists on both sides of the Atlantic, de Jouvenel hopes to redirect our occupation with past and present politics to concern for future political configurations. My personal "forecast" is that the "behavioral era," characterized by its emphasis on science, theory, quantification, and social psychology, will gradually yield to a more disciplined, more integrated, less diffused, less eclectic attention to possible future states of affairs, form among which societies (through their policymaking processes) can deliberately and knowledgeably choose alternative prospects according to their dominant value orientations. Whether the label that we attach to this next stage in political theory is "social change," "policy sciences," or some other, it will

¹ Literally hundreds of treatises and manuals on empirical methods are available. For elementary introductions for political scientists, see the individual volumes in JAMES A. ROBINSON (ed.), *Handbooks for Research in Political Behavior*, Evanston, Ill., Northwestern University Press. This series presently includes survey research, content analysis, data processing, and legislative roll call analysis; forthcoming volumes pertain to statistics, factor analysis, participant-observation, and computer simulation.

² BERTRAND DE JOUVENEL, *The Art of Conjecture*, New York, Basic Books, 1967.

concentrate on merging the often academically divorced interests in knowledge and action, in normative theories and political practices. Prerequisite to an effective policy science is an explicit, systematic orientation to the future. De Jouvenel has established ground rules for such an orientation.

Knowledge about the past (the traditional object of scholarship) differs fundamentally from knowledge about the future. The past is knowable, within limits to be sure, but in principle recordable, testable, and verifiable. The future is not knowable, because man can affect it in alternative ways. It is uncertain; therefore, "the expression 'knowledge of the future' is a contradiction in terms." But for purposes of action, "useful knowledge" relates to the future. Because the rate of social change is without precedent, much of what we know from custom or from history is irrelevant to the future.

De Jouvenel's metaphysics side with Voltaire against Maupertuis. We cannot know the future as we know the past; because the future is not yet determined, knowledge of it will not yield to some extra degree of intellectual effort or to some ingenious discovery. It is within our powers to anticipate "what may happen," not "what will happen." "The result of this work (prevision or forecast) is a *fan of possible futures*, or of futures which seem likely to us. But when we have completed this work to the best of our ability, we cannot say with certainty which of the seemingly possible futures will actually come about, nor even whether the future which will actually come about is contained in our fan of possible futures." Thus, the author distinguishes *conjecture* from *knowledge* and contrasts *pro-fereces* regarding possible futures with *inferences* about past and present states of affairs. As the above quotation indicates, no assurance exists that "futuribles," systematic thinking about the future, will exhaustively enumerate possible futures. The limits on prevision are severe; the effort is justified by its necessity—nay, inevitability: "...for my part, I would willingly say that forecasting would be an absurd enterprise were it not inevitable. We have to make wagers about the future; we have no choice in the matter."

In America, Harold Lasswell has long championed the policy science orientation with its devotion to the invention and promotion of alternatives to serve postulated goals of the body politic. In recent years, the American Academy of Arts and Sciences has dramatized the social scientists' commitment to the future by founding the Commission on the year 2000. Herman Kahn and Anthony Wiener have presented their construct of *The Year 2000*, in which they combine political factors with a systematic and comprehensive range of relevant considerations ¹.

In less philosophic and more experimental ways, individual researchers have been developing techniques for studying alternative futures. The most promising of these to date appears to be simulation, both all-computer and man-computer simulations. Ithiel de Sola Pool constructed a dynamic,

¹ New York, MacMillan, 1967.

computerized model of the American voting electorate for use in the 1960 and 1964 Democratic Party Presidential campaigns¹. Harold Guetzkow and his colleagues in Northwestern University's International Relations Program have developed an "Inter-Nation Simulation." The INS has been used to anticipate future prospects flowing from the proliferation of nuclear weapons².

No doubt, in later years, we shall look back upon the 1960s as a primitive period so far as concerns systematic thinking about the future. But we may also, in retrospect, regard this decade as the seed bed for a new kind of political science, one that combines science and policy, knowledge and values, thought and action.

Resources for the Study of Political Science

These are some of the intellectual trends that seem most remarkable to one observer of the behavioral influence in American political analysis. In addition to this brief resume of intellectual currents in political behavior, it is also important to add a few words about organizations that foster its study. The character of an academic discipline, its professional organizations, and its "group life" may be different for "behavioralists" than for "institutionalists."

American political scientists are barely organized, and international political scientists are even less institutionalized. Although the American Political Science Association claims more than 10,000 members, it does not include nearly all the teachers or practitioners of the subject, and the organization has so far not been as programmatic as associations of other professionals and practitioners. Lawyers, physicians and surgeons, and psychologists, for example, have exhibited more organizational and professional consciousness.

In point of fact, political science is not a discipline. A discipline consists of a body of scholars and practitioners who meet certain prerequisites for membership, who fill a particular social role, who possess specialized tools of analysis and practice, and who share an organized and specialized knowledge. Membership in associations, whether international, national, or regional, is open to anyone with the means and inclinations to pay the modest annual dues. No other qualifications or prerequisites for membership are stipulated. The roster of these organizations includes journalists, public relations experts, legislators, judges, bureaucrats, politicians, and civic-minded citizens together with only some of the men and women who specialize in teaching government and politics.

¹ ITHIEL DE SOLA POOL, ROBERT P. ABELSON and SAMUEL L. POPKIN, *Candidates, Issues, and Strategies*, Cambridge, Mass., MIT Press, rev. ed., 1965.

² RICHARD A. BRODY, "Some Systematic Effects of the Spread of Nuclear Weapons Technology: A Study Through Simulation of a Multi-Nuclear Future," *Journal of Conflict Resolutions*, Vol. 7, 1963, pp. 663-753.

Even these specialists have no distinguishing or identifiable social roles other than those of teaching and research. The undergraduates whom they educate study political science primarily because it is a "liberal art," not because it trains them for a societal role. Unlike a major in economics or chemistry or agronomy, a political science major can't "do" much with his degree. It does not qualify him for a career that a diploma in any other liberal art would not serve equally well. As preparation for foreign service or civil service it is not likely to be more advantageous than history, philosophy, or journalism. It confers no special favor for admission to graduate study in political science, because most graduate departments would as readily welcome a sociology, economics, or math major.

The techniques of political analysts are not distinctively political. Indeed, except for content analysis, invented by Harold Lasswell, no method owes its origins to a political scientist. To be sure, important adaptations have been made by political scientists in the use of surveys, interviews, simulation, and computers. These adaptations, like the original methods, are not peculiarly political.

Not only does the field lack a social role and special skills, but it possesses no distinctive body of knowledge that accredited political scientists accept and share. In some graduate schools the Ph.D. in political science is so shaped for individual candidates by individual professors as to thwart efforts to organize a common body of knowledge or theory to be imparted to all candidates.

Most political science research occurs in universities. In addition to their degree-granting activities, universities are the principal sites of centers or institutes of research in America. More than 200 Doctor of Philosophy degrees in political science are conferred annually, but perhaps half of these are awarded by only six or seven universities. Many who regard themselves as political scientists work for governments or teach in small colleges or universities with only modest programs of graduate study and faculty research. Further, few universities support research as extensively as they do teaching. This is critical for the social sciences, including political science, in which research must be largely outside the libraries of books and documents. Laboratory and field studies are expensive, and most scholars must apply to foundations, governments, or businesses for grants or contracts large enough to support their extensive researches. Consequently, foundations and governments especially have influenced the selection of problems for academic study ¹.

¹ JAMES A. ROBINSON, "The Major Problems of Political Science," in LYNTON K. CALDWELL (ed.), *Politics and Public Affairs*, Bloomington, Ind., Indiana University, Department of Government, Institute of Training for Public Service, pp. 162-165; and JACQUES BARZUN, *The House of Intellect*, New York, Harper and Row, 1959. The "New Left" have recently taken up this criticism and sought to popularize it. See, for example, THEODORE ROSZAK (ed.), *The Dissenting Academy*, New York, Pantheon, 1967.

That universities have often been legitimators rather than initiators of ideas and inventions is borne out by various histories and commentaries on higher education from Hastings Rashdall to Clark Kerr¹. Since universities were founded in the medieval period, they have been obligated to clients with practical interests in immediate applications. The *trivium* and *quadrivium* were as practical for the law, theology, and Medicine of Paris and Bologna in the Middle Ages as the modern multiversity of curricula in police science, political science, and poultry science for the United States. Moreover, when universities are the sites for new intellectual and institutional forms, they often restrict the innovations by only partially incorporating them into old, established forms. A lengthy probationary period is required of research agencies, bureaus, and centers by universities. These research units exist on the periphery of universities, outside established departments, with nontenure appointments for several years. Then, if successful, they are "legitimated" by the universities.

Not only does the practical orientation of universities make them conservative, but their decentralized organizational decisionmaking is another barrier to innovative leadership. Clark Kerr has argued persuasively that college and university presidents can do little more than mediate among entrenched deans, professors, schools, and departments. In addition, universities are marked by huge growth in size, by physical dispersion across many miles and even to different towns, and by their high degree of specialization. All these factors have fractionalized modern universities.

The consequences of the fractionalized university setting for political science are to deprive it of resources for comprehensive analysis of policy and policymaking. Instead of comprehensive, systematic studies that emphasize contextual analysis, many lone scholars are thrown back on investigating small aspects of the large "problems" that really interest them. Hence, their work lies open to the criticism that it is partial, miniscule, trivial. The *mathematical* and *futuristic* influences on modern and prospective political science may help to restore the unity of political analysis. Mathematics offers a powerful deductive weapon, not dependent on isolated fragments of research here and there. Futuribles requires a comprehensive, integrated analysis of "wholes" as well as "parts." In developments such as these we may hope for counter-movements against the decisive tendencies of the current setting and support for political science research in America.

We may also hope that in their evolving patterns not only American but world scholars can cooperate to perfect a science of politics that is truly cross-cultural, trans-national, and global.

¹ HASTINGS RASHDALL, *The Universities of Europe in the Middle Ages*, Oxford, Clarendon Press, 1936; CLARK KERR, *The Uses of the University*, Cambridge, Mass., Harvard University Press, 1963.