

**The Scientification of the Study of Politics:
Some Observations on the Behavioral Evolution in Political Science**

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*I am grateful to Richard Fleisher, George Edwards, Kim Hill, Patricia Hurley, John Geer, Cary Nederman and probably several other colleagues that I have forgotten about for helpful comments and suggestions.

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We call our discipline “political science.” The term “science” implies use of the scientific method. “Science” has had different meanings at different times. In the archaic sense, science is just “knowledge”, or knowledge gained by study. In modern usage (since the 18th century), science is a method of learning based on systematic observation using the scientific method. It is a method of learning different from the arts. The “scientification of the study of politics” refers to the process through which political science as an academic discipline has come to use the scientific method for the production and dissemination of knowledge about politics.¹ The notion of scientification suggests a two-way relationship between science and politics. As Weingart (2002) says, it “can be described as a recursive coupling of two interdependent developments—the scientification of politics and the politicisation of science.”

From the genesis of the discipline around the turn of the 20th century through every stage of development, there has been conflict and debate over the linkages between politics and science:

1. Is politics art or science?
2. If politics is a science, can *political science* be a “real” science and discover underlying laws of politics?
3. Even if political science is (or can be) a real science, is this a good thing?

This conflict is not just academic. It’s political. As Harold Lasswell (1938) observed, politics is the resolution of conflict over “who gets what, when, how?” The “what” in this particular political debate is *education*, by which I mean the production of dissemination of knowledge through publication and teaching. The most intense part of the debate has focused on the “how”—the *method* of producing knowledge about politics.

The debate, for the most part, has been civil and professional. Yet intense feelings on both sides have produced some acrimonious exchanges. One famous example occurred in the early 1960s during what we typically refer to as the “behavioral revolution.” In the epilogue of a series of essays (Storing 1962) critiquing what was termed “the new political science”, Leo Strauss (1962, 327) observed, “Nevertheless one may say of it [quantitative political science] that it fiddles while Rome burns. It is excused by two facts: it does not know that it fiddles, and it does not know that Rome burns.” In a lengthy “review”, John Schaar and Sheldon Wolin (1963, 126) characterize the book as “fanatically serious.” Professor Strauss responded that the review was characterized by fanaticism, “precisely the vice of which [he was] accused”, and he suggested that the authors misunderstood the meaning of certain statements that would be “clear to every reader of ordinary intelligence and fairness” (Storing, et al. 1963, 153).

In a contemporary iteration of this debate, our colleague Kim Hill (2002, 113) accepts the “scientific legitimacy of the discipline [as] unassailable” but he laments that political science is “the only scientific discipline . . . that essentially fails to educate its students in its primary concern.” On the other side of the debate, our colleague Harvey Mansfield (2006) laments that universities no longer educate students in “greatness” through the study of great books. He indicts social science as a key obstacle to education in greatness. The grounds for this indictment are that the social scientist’s search “for the cause of greatness in the circumstances of mass movements or trends . . . is based on a simplistic psychology of maximizing the power of one's preferences. . . . It is blind to the psychology of greatness because it cannot see actions that sacrifice self-interest to espouse a cause. It has no inkling of human spiritedness . . . that prompts us to assert a principle by which to live—and for which to die—as opposed to surviving by any means possible.”

Thus, the debate about science and politics continues. The behavioral study of politics incorporates the essential elements of the scientific method, including the development and testing of general—or at least, mid-range—theory. The so-called “behavioral revolution” is typically presented as a watershed in the development of the scientific study of politics, and its origins are typically traced to the 1960s. I want to take this opportunity to reconsider the characterization of the scientific study of politics as a “revolution.”

I propose to outline some landmarks in the scientification of political science, paying attention not only to the growing use of the scientific method, but also to the development of theory (in the empirical, scientific sense). This task was done admirably for research reported in the *American Political Science Review* in its centennial issue (Volume 100, November 2006). Although the *APSR* may be the discipline’s premier journal, it is but one of several outlets for scientific research on politics. To better understand the scientification of the discipline, I will look at a broader range of outlets available for the publication of scientific scholarship on politics. In particular, I look at research published in other professional journals available since the founding of the discipline (e.g., *Political Science Quarterly* and some sociology and history journals²). I will also look at some early textbooks to see what our predecessors were teaching students about the scientific study of politics. To keep the task manageable, the discussion will reflect my interest in the study of democratic (mostly American) political institutions and behavior.

I find evidence that the scientific of the study of politics was common decades before the 1960s. The roots of behavioralism extend to the founding of political science as an academic discipline. While quantitative, behavioral analysis began to dominate the pages of the *APSR* in the 1960s (Sigelman 2006), scientific, theoretically based studies of American politics were regularly appearing in professional social science journals and undergraduate textbooks decades earlier. Those

spirited and sometimes acrimonious debates, such as the one referenced above, may have sounded like the rhetoric of revolution, but it was the intensity of the rhetoric rather than the scholarship that changed so abruptly.

As I add my personal perspective to this debate, I hope to avoid the acrimony of the past. Those of you who know me and my work, however, won't be surprised that I come down squarely on the side of science.

1. I believe that while there is an art to politics³, there are basic laws that explain political behavior and these laws can be discovered through the scientific method.
2. I believe that political science is a “real” science, though in an earlier stage of development than the natural and material sciences. Notice that I didn't call those other fields “hard sciences.” Political science is truly a “hard” science because of the difficult challenges we face in the measurement of key concepts and even in observing the political processes and behavior we seek to study. James March was right when he said, “God gave all the easy problems to the physicists” (quoted by Wuffle 1986, 59). I don't know if our challenges to measurement and data collection are greater than those facing say, astronomers or meteorologists, but we do have the additional burden of having to justify our work as science. I doubt that astronomers ever claim to be astrologists (or vice versa).
3. I believe that the scientific study of politics is a good thing because it advances knowledge and human understanding. It's not the only way to study and learn about politics. I agree with Professor Mansfield that the study of great books and great men—and women—deserve a place at the center of the university. But just as science is not the only way to learn and create knowledge, neither do the arts and humanities have a monopoly on education. If Aristotle is right that “man is by nature a political animal” (The Politics

1253a1-3), then the study of politics is the most important part of becoming an educated person and citizen. And recall that Aristotle studied both the art and science of politics. He is an early example of a great scholar and philosopher who analyzed the art of politics informed by systematic, empirical observation (*The Politics*, Book III).

Before looking at the evidence, I should identify the key elements of science that I looked for in my search for landmarks.

Key Elements of the Scientific Method

The key elements of the scientific method are well known, so this will be a brief sketch of what I consider the most important. The beginning of scientific inquiry is the **fact/value dichotomy**. The scientist is concerned with the study of how and why things work as they do rather than with how they should work. Some philosophers object to this distinction—facts are values and values are facts. The choice of a puzzle to study, of which “facts” to collect, indeed, the very act of scientific study itself, involve value judgments. The objection is valid, but it does not negate the need for and worth of science. I suspect that many scientists believe that scientific knowledge is superior to knowledge gained from art or literature or “great” leaders. Personally, I’m not ready to make such a sweeping value judgment. But art and science use different methods to answer different questions, and they produce different kinds of knowledge. I am ready to make the value judgment that this diversity of knowledge benefits society in general and our students in particular. We are better off with both than we would be with only one.

Another feature of the scientific method is the systematic observation of empirical facts. Please note that I am not suggesting that art or literature is unsystematic. Good art and good literature surely require the systematic observation of the empirical world. I suspect that great art and literature are produced by the most gifted observers. But scientific observation is done with an eye toward

reliability and replication. Since science is based on the distinction between fact and opinion, scientists must provide information about how observations were made and analyzed so that someone else can check our work. An independent check on our work involves more than catching errors, although that is part of it. John Ferejohn was surely right when he said, “The thing that keeps most empirical political scientists honest is that somewhere out there is [a] graduate student with your name on it” (quoted by Wuffle 1986, 57). But replication is indispensable to the development of scientific theory. If another researcher cannot follow our procedures and reproduce the same results, then the measures constructed from our observations are meaningless—or at best the meaning is unknown. Measures, of course, must also be valid indicators of the concepts we are studying. But an unreliable measure cannot be valid. Any relationships found between unreliable, invalid measures cannot fit together with other discoveries to build theory.

A closely related element of the scientific method is **quantification**. Quantification is useful for systematically recording observations and for checking reliability. Quantification is indispensable for testing hypotheses and finding relationships in studies with a large number of cases.

This brings me to the core goal of the scientific method—**hypothesis testing and theory building**. Theory is concerned with the how and why of natural phenomena—how does it work and why does it work that way? Theory building proceeds from description to explanation and prediction. Description of some natural phenomenon is a critical first step—we have to know the essential elements of something before we can answer how and why it ended up as it did. But explanation is the core goal. If we can explain how and why something varies, then we should be able to predict what will happen under certain conditions.

Theory building involves testing hypotheses through empirical observation. Empirical testing implies **falsifiability**. An empirical theory or hypothesis cannot be scientific unless there is at least the

possibility of proving it wrong (Popper 1959). In science, being wrong is far from the worst that can happen. Disproving a false hypothesis is useful because it eliminates a dead end and allows us to look for more promising explanations. A theory that can't be falsified offers no such benefit. As theoretical physicist Wolfgang Pauli once said of a particularly weak student paper, "It is not *even* wrong" (quoted in Burkeman 2005). Thus, the scientific method proceeds not by proving what is true, but rather by eliminating what is false. It is much like Sherlock Holmes' description of how he solved mysteries: "when you have eliminated all which is impossible, then whatever remains, however improbable, must be the truth" (Doyle 1926).

The scientific method also seeks theories that are **generalizable** beyond a particular case. Case studies have—and deserve—an important place in scientific research. We should recognize that case studies are empirical—they can explain how and why something happened through systematic observation of all the details of a particular event. Even extreme, atypical cases often reveal critical insights and suggest new variables and hypotheses. Indeed, finding a single nonconforming case will falsify a theory claiming that no such case exists.

Unlike case studies that seek to describe and explain reality by identifying all of the details in play for some event, however, the scientific method seeks to build a theory that is an abstraction of reality. That is, a scientific theory is not an accurate reflection of reality. Instead, it is a model that ignores facts and details that are not essential to explain some general process or a class of events. As Jim Rogers (2006, 276) explains, "the unrealism of . . . any model . . . is not a vice, it is a *virtue*." He observes that a street map is a model of the earth's surface that distorts reality. Yet it contains the essential details necessary to achieve its purpose—to show motorists the streets and where they go. A more realistic depiction of a city would not be useful for navigation because the essential feature—the streets—would be obscured in a host of irrelevant details.

These, in my view, are the essential elements of the scientific method. Each is necessary, but no one by itself is sufficient. The scientific method requires (at least) all of these features.

Landmarks in the Scientification of the Study of Politics

It is common to note that the empirical study of politics, including a systematic research agenda that involved sending students out to collect data, dates back at least to Aristotle. I begin my overview much later with the beginning of political science as a distinct academic discipline. Although there were chairs and departments of political science as early as the 1860s, the formal organization of a distinct academic discipline separate from history, sociology, and economics began around the turn of the 20th century: the *Political Science Quarterly* published its first issue 1886; the American Political Science Association was established in 1903 and began publishing the *American Political Science Review* in 1906; the *Journal of Politics* first appeared in 1939.

The Early Decades: The Roots of the Scientific Study of Political Behavior

Although the empirical research published during the first two decades of the discipline was mainly descriptive, the prevailing vision was that political science is the objective study of government based on the fact/value dichotomy. In the first issue of the *Political Science Quarterly*, Munroe Smith (1886) outlined “The Domain of Political Science” using language that contains features of the scientific method as I have described it. He says, “Science is the discovery of truth”, and political science is the “science of the state” including “the organization and functions of the state” (Smith 1886, 2). The method of political science is “*comparison*” of empirical data, and the goal sounds remarkably similar to model building: “The single fact means nothing to us; we accumulate facts that seem akin; we classify and reclassify them, discarding superficial and accidental similarities. . . .” (4).

The American Political Science Association emerged from the American Economic and American Historical Associations in 1903. Reading the notes published by the political scientists who

formed the initial organizing committee, our Founders understood that they were engaged in a political process as they tactfully praised the parent organizations (or should it be “sister” organizations?) for the institutional support. They appear to use term “science” in the sense of objective study (American Political Science Association 1904). Presidential addresses of early APSA presidents echoed the notion that political science is the study of politics that separates facts from values (Ford 1905; Goodnow 1904; Shaw 1907). In 1910, A. Lawrence Lowell drew an explicit parallel between science and politics in his presidential address “The Physiology of Politics.” He urged political scientists to study the functions that the organs of government “actually do perform” rather than those that are intended (1910, 1). In addition, Lowell (1910, 8) observed that “every action is the resultant of many forces which cannot be isolated, and hence is capable of being explained in different ways.” Consequently, political scientists need knowledge of a wide range of conditions in order to “feel the motives” and “appreciate the reasons” why political actors do what they do (9). He even calls for the use of statistics (10). This strikes me as a call for the quantitative study “political behavior” in what is essentially a stimulus-organism-response theoretical framework.

In addition to looking at research published in professional journals, I sampled some books. Any review of the scientification of political science in the U.S. must begin with Arthur Bentley’s *The Process of Government* (1908). Bentley may be inordinately wordy, taking numerous discursive detours before getting to a point, but this work deserves its status as a classic study in political science, with the emphasis on *science*. Bentley analyzes politics through systematic observation of behavior. More importantly, the analysis is grounded in sociological theory that makes assumptions about what motivates political behavior. In short, I view this work as an early example of behavioralism. It is clearly a major part of the scholarly research of its day.

Another example of early research with elements of science is A. Lawrence Lowell's (1908), *The Government of England*. This book is a remarkable example of scholarship. Its two volumes of more than 500 pages in each provide a comprehensive analysis of politics and government in England in the latter part of the 19th century. Although much of the specific details and processes have changed, the science in it continues to enlighten. I was especially impressed with his analysis of "The Strength of Party Ties" in the House of Commons (Lowell 1908, vol. 2 chap. XXXV). Lowell begins with a strong case for using statistics to study politics. He observes, "Statistics are proverbially deceptive." But "if applied with discretion, they are indispensable as a means of discovering truth" (Lowell 1908, 71). The basis of his argument is that what human beings see and remember about politics is not necessarily representative in general. In the case of political parties, for example, Lowell suggests that people are more likely to be conscious of "instances where party is abused for purposes that seem . . . improper," but to scarcely notice the cases where it is used for something deemed proper. Furthermore, he argues that it is "highly unsafe" to assume that something observed in one instance works the same in other cases (72). Therefore, "an observer . . . is likely to be misled in regard to the influence of party" unless the misperception is corrected by statistics (71). Lowell's analysis of parties shows that party discipline is much stronger in the House of Commons than in the U.S. Congress and state legislatures (1908, 74-92). He defines a "party vote" as one on which more than 90 percent of the party vote together, and "true party votes" are those on which 90 percent of one party votes against 90 percent of the other party (75-76). Contemporary measures of party voting Congress are based on the logic of this century-old concept. And although there are no statistical hypothesis tests, Lowell (1908, 85 and 92) explains the high level of party discipline in England as "a natural result" of the parliamentary system in which the loss of a key vote results in the fall of the government.

The American Political Science Association adopted the goal of improving education in American government early in its development (Committee of Five 1908). The much maligned American government textbook occupied a higher status in the scholarship of the day than is the case now. American government textbooks, even those intended for use in high schools, were routinely reviewed in the *APSR*. And the authors of this genre of scholarship included the most productive and most influential political scientists of the day. Kim Hill's (2002) lament about the state of science education in political science, made me curious about what early political scientists were teaching undergraduates.

The earliest American government textbook I could get my hands on is Charles A. Beard's, *American Government and Politics* (1910). This is clearly not the first such book, but Beard indicates that few of the texts available at that time were designed specifically for college students. He does not view it as a "contribution to political literature, but is frankly based upon the best authorities of recent times" (v). That is, it is not original research, but it teaches undergraduates what political science research has discovered about how American government works and why it works as it does. I found that this textbook is indeed based on the political scholarship of the day. It will come as no surprise that most of the book is historical and legalistic descriptions of the institutions and processes of American government.

Nonetheless, there are elements of political behavior. The chapter on political parties, for example, relies extensively on Bentley (1908), and poses a version of the *Why Parties?* question: "inasmuch as a government is . . . a human institution, with a policy to execute and duties to perform, parties are inevitable. . ." (Beard 1910, 101). Professor Beard's answers to why parties are essential to democratic governance are:

1. Parties reduce information costs, enabling voters to make “wise choice[s]” on the large number of elective offices in America (102); and
2. Parties are necessary to coordinate policy in a governmental structure fragmented by federalism and separation of powers “if the will of the voters is to be realized” (101).

The significance of this observation for the scientification of political science is that it presages V.O. Key’s (1942) essentially functionalist theory that parties are necessary to the operation of popular government. And while it is not presented as such, this can be interpreted as a theory that political parties develop to overcome what we would now call collective action problems (Aldrich 1995). Beard (1910) also teaches students that:

1. the working of Congress is largely determined by the two parties (267), which was the case when this book was written;
2. members secure “pork” for their districts through “log-rolling” in order to get reelected (269-71); and
3. legislative work is largely done in committees controlled by the majority party.

So, the analysis of political behavior was evident in the formative stages of the discipline, and there are occasional hints of theories to explain that behavior.

The 1920s: Increasing Incidence of Behavioralism

In the 1920s we see increasing evidence that the study of politics is becoming more scientific, with more emphasis on theory and quantification. The leader of this transition was Charles Merriam, though others contributed. Merriam’s (1921) review of the state of the discipline in 1921 is an early recognition that the study of politics was becoming more theoretical in the way that we use the term today. Two years later, Merriam (1923) was able to review a considerable amount of research demonstrating significant progress toward the scientific study of politics. He notes several examples of

studies that use the method of “comparison of various types of institutions, with the view of classifying, analyzing, discovering similarities and dissimilarities in them” (1923, 282), citing Lowell (1908) among others as examples. He also points to a “form of investigation which came to be called the survey” in which researchers attempt to “standardize some system of measurement” to objectively observe and explain political behavior (Merriam 1923, 283). He notes difficulties of developing accurate measures of political phenomena, and he observes that controlled experiments “seemed to be beyond the reach of the student of political or social science.” Yet Merriam expresses optimism that this difficulty can be overcome because political processes are ongoing and that it “is possible to draw inferences and to verify these inferences by repeated observation” (289). He followed this up with an analysis of “The Significance of Psychology for the Study of Politics” (Merriam 1924) in which he advocated research testing hypothesized relationships derived from psychological theory, conducted in a way that the research could be repeated and replicated (also see Lasswell 1925).

Arnold Bennett Hall organized conferences on the “science of politics” in the mid-1920s with the goal of advancing scientific theories and methods to study political behavior (Hall 1924; Hall et al. 1925). It is particularly noteworthy that several of those who attended reported using reports from the conferences as a basis for seminars, indicating that training in science was becoming part of graduate instruction (Hall 1924, 121). Extending scientific, behavioral analysis to the introductory political science course was the theme of conferences later in the 1920s (Bates 1927; Spencer 1928). And increasingly technical articles begin to appear in the *APSR* (e.g., Catlin 1927; Rice 1926).

But the *APSR* was not the exclusive outlet for scientific analysis of political behavior in the 1920s. Notable examples of behavioral research appeared in books such as Merriam and Gosnell’s, *Non-Voting: Causes and Methods of Control* (1924) and Gosnell’s, *Getting Out the Vote* (1927). Furthermore, judging from the literature cited in these studies, quantitative, theoretically based studies

of political behavior were common in other social science journals (e.g., *American Journal of Sociology*, *Social Forces*, and *Political Science Quarterly*, among others). Political scientists who wanted a political science grounded in the scientific method had numerous examples and outlets by the 1920s.

Findings of the scientific research on political behavior available at the time, however, seem to appear less regularly in undergraduate American government textbooks. Although I systematically reviewed only one, I chose the first edition of Frederic A. Ogg and P. Orman Ray's, *Introduction to American Government* (1922). Revised editions were published until the early 1950s, and this book might be considered a "classic" of its genre, if there can be such a thing as a "classic" American government textbook. Part I on the "The Nature and Problems of Government" is grounded in the literature of political theory. The remaining sections of the book, however, contain legalistic descriptions of the institutions of American national and state government. The chapters on Congress, for example, contain descriptions of rules and processes. One chapter does discuss the importance of the party caucus in maintaining strong party discipline, but there is no empirical evidence or research presented to support this assertion. Similarly, the chapters on elections and voting focus on legal issues, but include no discussions of the origins or influence of party identification. Thus, while I found evidence of a considerable body of research on political behavior in professional journals, this research did not make its way into this highly successful undergraduate textbook.

Nonetheless, some political scientists continued to advocate a more scientific approach to undergraduate teaching. In the late 1920s, there were conferences that included roundtables advocating adopting a "functional" rather than a descriptive, structural approach to the introductory course (Bates 1927; Spencer 1928). Although I found no reference to Durkheim ([1895] 1982), the ideas of this "functional" approach are certainly compatible with the sociological theory of "functionalism."

Richard Spencer (1928, 955), for example, made a case for organizing courses to “enable the student to expect and to apply truly scientific methods rather than impulsive responses to political phenomena.” Achievement of this educational goal assumes “that the instructor is familiar with the fundamental methods of scientific investigation and thought, not only in the social but also in the natural sciences—that he is familiar with the use of observation, analysis, hypothesis, measurement, inductive reasoning, synthesis, and the making of further hypotheses for purposes of experiment and test.” And what is meant by “function”?

Now, the function of anything is what it by nature usefully does. Politics or governmental activity is a function—one of the many functions of society—the function by which men regulate (usually with the possible employment of force) their activities with and toward each other as individuals or groups of individuals, or as groups toward the individual and vice versa. Government is a function which at its borders blends with many other social functions. What government does constitutes the various functions of government. . . . What government performs its functions with constitutes the agencies of government. These agencies may possess the character of either formal or informal structures of the nature of law and custom. (Spencer 1928, 957)

The ultimate educational goal of the functional approach is building a general theory of causes of political phenomena, and Spencer (1928, 963) argued that the “Functional attitude prepares one to search for the relationship of cause and effect.”

I found one American government textbook that claimed to adopt “a ‘functional’ as distinct from a ‘structural’ point of view” (Anderson 1938, iv). The implementation of the approach, however, seems to be little more than describing a particular “function” (e.g., legislative, executive, and judicial)

through national, state and local government instead of the usual approach of repeating discussion of these institutions and processes for each level of government. The book contained little if any presentation of the findings of basic, scientific research on politics. Chapters on parties, elections, and legislatures, for example, contained none of the specific lessons and findings found in Beard (1910).

The 1930s and 1940s: Scientific, Behavioral Analysis Takes Hold

By the 1930s and 1940s, articles reporting quantitative research of political behavior grounded in theory were appearing with greater regularity in the *APSR* and the *Journal of Politics*. Articles by Gabriel Almond and Harold Lasswell (1934) and Harold Gosnell and Norman Gill (1935) report research containing the elements of the scientific method outlined earlier. Gosnell and Gill's (1935) analysis of the 1932 presidential election in Chicago, for example, used correlation, partial correlation, and factor analysis, and related the findings to theory. Although the analysis is not based on a representative national sample, the results of this study are remarkably consistent relationships found in later research. V.O. Key (1943) published a quantitative analysis of interest group (i.e., Veterans) influence and how support or opposition to that interest on roll call votes in Congress affected members' reelection. And his *Southern Politics* appeared in 1949.

We see additional evidence of the scientification of the discipline in textbooks. V.O. Key published the first edition of his undergraduate textbook, *Politics, Parties and Pressure Groups* in 1942. The book is well grounded in the basic research available at that time. Although it is not explicit in this edition, we can see the beginnings of Key's tripartite definition of political party—party in the electorate, party in government, and party organization—that appeared in later editions (Key 1958, 180-82). Moreover, Key reports the results of numerous studies of voting behavior. For example, Key's book taught undergraduates about party voting and party discipline in Congress (Key 1942, 502-503). They learned that informal groups of “radicals” and “progressives” were more cohesive than

either party group (Rice 1928, 208-217) because members' reelection goal causes them to support constituency over party if there is conflict (Herring 1935, 997). The chapter on Electoral Behavior reports dozens of quantitative studies explaining vote choice as a function of economic status, change in economic status, cultural background characteristics, and business cycles (Key 1942, 624-32). He explains to undergraduates (Key 1942, 634) how to interpret a study by William F. Ogburn and Nell Snow Talbot published in *Social Forces* (1929) that uses partial correlation analysis to sort out the relative influence of several variables—foreign born, urban, Catholics, Democratic voters, and “wet voters”—on support for Al Smith in 1928. How many contemporary undergraduate textbooks attempt to educate students in techniques of the scientific method?

Key's presentation of this research is grounded in theory. The discussion of “Characteristics Associated with Voting” poses two questions: (1) are cleavages between parties in a particular election explained by wealth, economic interest, race, or something else; and (2) what accounts for changes in party affiliation from election to election? (Key 1942, 623). He tells undergraduates that “many hypotheses have been formulated”, but that most of them “assume a rational political man who votes in accordance with his estimate of how his ‘interests’ may be defended or promoted” (624).

Although much of the early research focused on political parties, elections and voting behavior, scientific analysis of political behavior extended to other institutions. C. Herman Pritchett's analysis of the voting behavior of Supreme Court justices is a particularly important milestone in the behavioral evolution. At the same time that V. O. Key's parties textbook first appeared, Pritchett (1941, 1942) published studies of the voting behavior of Supreme Court justices in the *American Political Science Review* and in the *Journal of Politics*. In these articles, Pritchett laid the groundwork for his book *The Roosevelt Court* (1948) and launched what would evolve into the “attitudinal model” of judicial decision making (Segal and Spaeth 1993).

The theoretical underpinning of this research is the stimulus-organism-response framework. Coming out of the realist theory of judicial decision making, Pritchett (1941, 890) argues that “it is the private attitudes of the majority of the Court which become public law” and the justices’ attitudes are revealed by their votes. He does not deny the importance of legal values in judicial decision making. Most decisions during the court term Pritchett studied were unanimous, and he assumes that in these cases “the facts and the law are so clear that no opportunity is allowed for the autobiographies of the justices to lead them to opposing conclusions.” But the justices’ votes in non-unanimous cases reveal their attitudes. Since the justices are exposed to the same stimulus—“an identical set of facts, and . . . roughly comparable training in the law”—when they come different conclusions, the “divisions of opinion grow out of the conscious or unconscious preferences and prejudices of the justices.” The analysis allowed Pritchett (1941, 894) to array the Justices along a left-right, liberal-conservative continuum with Black and Douglas anchoring the liberal bloc McReynolds and Roberts on the right. And he defined ideology much as we do currently in terms of the use of governmental power—liberals favor the use governmental power in economic regulation cases and conservatives oppose, but in civil liberties cases the positions are reversed with liberals seeking to limit government authority and conservatives supporting government (895-96). Pritchett replicated the basic theory and findings with data from subsequent Court terms in articles published in the *Journal of Politics* (1942, 1946) and in a book (1948).

Thus, the use of the scientific method to study political behavior and the development of theory was advancing briskly through the 1930s and 1940s.

So, What Is the State the Scientification of Political Science?

My assessment is that the scientification of political science has progressed considerably during the discipline’s first century. The use of the scientific method to study political behavior was evident

during the formative years, and became increasingly common during the 1920s. By the 1930s, the commitment to the scientific study of political behavior was firmly established, several decades before we began that raging debate over the so-called “behavioral revolution.” To me, the scientification of political science looks less like a revolution and more like a trend that has been evolving from the beginning. I know I will cease teaching my students that scientific study in political science began in the 1960s.

Despite having traveled a significant distance down the road to becoming a “real” science, however, we are still in an earlier stage of development than the natural and material sciences. Part of the reason for the lag in our development as a science is that political science is the truly “hard” science. The challenges to observation and measurement of our key concepts seem greater than those facing other sciences. But I am skeptical that learning increasingly complex and sophisticated statistical methods will do much to advance our scientific development. The kind of revolution necessary to propel political science to the next level of development is a revolution in theory. Sir Isaac Newton’s contribution to the science of physics was not the basic research he did, but rather it was his recognition of how put what physicists already knew together into a new overarching theory. I believe it’s possible that political science has accumulated enough information about how and why politics work as they do to support such a synthesis. But no one has come along yet to do for political science what Newton did for physics. Lee Cronbach and Philip Converse were right when they said, “In the social sciences, waiting for Newton is like waiting for Godot” (quoted in Wuffle 1986, 59).

A review of the scientific research on politics published in the top political science journals over the past couple of decades indicates that economic theory is currently the dominant theoretical perspective in political science. Ronald Reagan defined economists as “people who see something that works in practice and wonder if it would work in theory.” Or more precisely, they wonder if it would

work in *rational choice* theory. The answer it seems is always “yes”—any political activity can be analyzed and explained as rational actors making rational choices. Despite its numerous contributions and insights about politics, I am not persuaded that rational choice theory will provide that Newtonian theoretical breakthrough for political science. So far, it seems to me that rational choice theory is nonfalsifiable. I once suggested to an economist friend that rational choice theory is a tautology—“people do what people do.” I was surprised that he agreed, saying “yes, but it’s an enormously powerful tautology.” Powerful indeed—powerful enough to become the dominant paradigm in at least two social science disciplines. But I tend to agree with Popper (1959) that a theory cannot be scientific unless it is falsifiable at least in principle.

Thus, while economic theory corrects some major flaws in sociological theory and functionalism (Barry 1970) and has made our study of politics more rigorous, I don’t think we should use and teach this theoretical framework as the sole way to study politics scientifically. As we progress as a scientific discipline, I expect that there will be challenges to the dominance of economic theory, though it is not clear to me what the next paradigm might be (Kuhn 1962). Some political scientists have gained theoretical leverage in the analysis of politics from biology, genetics, and ecology (Alford, Funk, and Hibbing 2005; Baumgartner and Jones 1993; Carmen 2004; Gray and Lowery 1996). I’m not ready to embrace this perspective as the next dominant paradigm either. I do think we have learned and will continue to learn from diverse perspectives. To paraphrase that economist stranded on the desert island with no way to open a can of beans, let’s assume progress, and go ahead and conduct the research. Normal science is not a bad thing.

Thus, we return to that important normative question of whether our development as a science, however retarded or advanced it may be, is a good thing. As I have indicated, I think it is a good thing. And I don’t believe that political scientists are enemies of greatness. Professor Mansfield (2006)

argues that because “Modern science is . . . always on the advance . . . the greatness of past scientists like Galileo, Kepler, and Newton is diminished by their obsolescence.” I disagree. Science is about the search for “truth” empirically verified. “Truth” are plural—there is not one truth for all time and all things. If new evidence comes to light that renders some empirical truth false, the obsolescence does not diminish the greatness of the scientist who made the great discovery. Does Galileo’s experiment with falling objects falsifying Aristotle’s theory of gravity diminish Aristotle’s greatness? The scientist who corrects errors or reveals the limitations of even the greatest scientific discovery deserves a share of greatness, but the greatness of the original contribution remains undiminished. Greatness expands as new evidence and new ideas add to the storehouse of knowledge.

The scientific method is a journey in search of truth. The first step is to ask important questions. An indication that you know enough to ask the important questions is the recognition of how much you don't know--that is, you have to know enough to be wrong. The mark of a scholar is a thirst to know more--to correct the errors and discover even more questions. The truths that we find along the way are always incomplete, transitory, and really quite secondary to the questions. This is the nature of education in greatness. The greatness of education is in the journey.

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Notes

¹“Scientification” is an ugly word, harsh to the ear and irritating to the brain, a case of academic jargon at its worst. Perhaps so, but I am not the first to use it. It appeared as early as the mid-19th in an essay by Joseph Green (1877) in a music journal, *The Musical Times and Singing Class Circular*, published in the United Kingdom. The earliest use I found in American social science journals is by George Stigler (1938) in the *Journal of Farm Economics*, and Edwin Boring (1942) in the *American Journal of Psychology*. It did not show up in political science journals until 1960s: Joan Bondurant (1963) *Journal of Conflict Resolution*, and Fredric Cheyette (1963) *Political Science Quarterly*. I appeared in the pages of the *Journal of Politics* in 1984 (Kaufman-Osborn 1984). Thus, the word has been around for a long time, though its use is not frequent.

² I will also look at research published in the *Journal of Politics*. Although the *JOP* did not begin publishing until roughly two decades after the founding of political science as a separate discipline, it published scientific studies of politics almost from its inception, and made important contributions to the scientification of the study of politics.

³ Among numerous examples of the art of politics, one of my favorites can found in Edwin O’Connor’s, *The Last Hurrah* (1956) when Boss Frank Skeffington explains the art of “compromise” (237). But showing the art of politics is not confined to political fiction. In my view, the research of V. O. Key and Richard Fenno captures much of the art of politics and uses it to enrich their political science (see e.g., Key 1949 and Fenno 1978).