CHAPTER 2

Studying Politics Scientifically

As Chapter 1 explained, empirical research employs scientific principles and methods of observation and results in scientific knowledge. In this chapter we shall explore the ways in which scientific knowledge is different from other types of knowledge, with respect to both the kind of knowledge it is and the method by which it is acquired. Important features of the scientific research process and the scientific study of politics also will be discussed. The chapter concludes with a brief history of political science as a discipline.

Characteristics of Scientific Knowledge

In our daily lives we "know" things in many different ways. For example, we know that the bus will get us to work more quickly than the train, and that small towns are safer than big cities. We also may "know" that blondes are more fun than brunettes, and that there is life after death. In some cases we know something because we believe what someone has told us. In other cases we know something through personal observation or because it appears to be logical or consistent with common sense.

One particular way in which knowledge is acquired is through a scientific process. As we noted earlier, scientific knowledge differs from knowledge derived from myth, casual observation, intuition, belief, or common sense. It has certain characteristics that these other types of knowledge do not share completely: it is empirical and subject to empirical verification, nonnormative, transmissible, general, explanatory, and provisional. Each of these characteristics will be examined in turn.
When we say that scientific knowledge is empirical we mean that it is "grounded in observation and experience." We can use our senses to observe actual occurrences of some phenomenon (such as political protests, votes cast in the U.S. Senate, invasions of the territory of one nation by another) and to record those observations as accurately as we can. In the examples in Chapter 1, for example, researchers recorded actual occurrences of land ownership, political disorder and violence, voting and spending in congressional campaigns, public opinion, policy changes, and judicial decisions.

By empirical verification, we mean that our acceptance or rejection of a statement regarding something we "know" must be influenced by observation. Thus if we say that New York State has mandatory seatbelt use legislation, we must be able to provide tangible evidence, such as a copy of the law, to verify the statement. Similarly, as Chapters 3 and 5 will make clear, proposed explanations (that is, statements that claim that the occurrence of a phenomenon is caused by another phenomenon) must be verified empirically; they cannot simply be assumed to be true.

The empirical nature of scientific knowledge distinguishes it from mystical knowledge; in the latter case only "true believers" are able to observe the phenomena that support their beliefs, and observations that would disprove their beliefs are impossible to specify. Knowledge derived from superstition and prejudice is usually not subjected to thorough empirical verification either. Superstitious or prejudiced persons are likely to note only phenomena that reinforce their beliefs while ignoring or dismissing those that do not. Thus their knowledge is based on selective and biased experience and observation. Superstitious people are often fearful of empirically testing their superstitions and resist doing so.

Common sense knowledge as well as knowledge derived from casual observation (for example, we might observe among our friends that penguin-toed people are more athletic than those whose feet point outward) may be valid, yet they do not constitute scientific knowledge until they have been empirically verified in a systematic and unbiased way. Alan Isak notes that common sense knowledge is often accepted "without question, as a matter of faith," which means that facts are accepted without being explained properly. Common sense knowledge may be, therefore, limited and superficial.

Sometimes systematic verification of common sense knowledge can have surprising results. In Ted Gurr's study of civil strife, for example, common sense might have led us to predict what civil violence will occur whenever economic conditions are poor or worsen. The evidence accumulated by Gurr, however, indicated that violence is likely to occur when expectations and attainment do not coincide—in other words, when relative deprivation (not deprivation itself) is felt. Consequently, contradicting common sense knowledge, he concluded that conditions can be quite bad and a society relatively peaceful if poor conditions are expected and accepted.

Another good example of the limitations of common sense may be found in a study of presidential campaign rhetoric. In 1960 four televised debates took place between the Republican party's nominee, Richard M. Nixon, and the Democrats' presidential candidate, John F. Kennedy. In the first debate Kennedy was generally considered to have given the better performance and to have benefited from his more aggressive debating style and attractive appearance. Common sense might lead one to expect that a significant portion of the electorate would have decided to vote for Kennedy after that first debate. Evidence collected during the 1960 campaign, however, has indicated that that one debate did not greatly influence most voters' candidate preferences. Although there was a noticeable postdebate surge for Kennedy, it was neither of great size nor necessarily a result of the debate itself. Most people retained their predebate vote intentions. What little shift there was toward Kennedy came mainly from wavering Democrats who might have decided to vote for Kennedy anyway before the end of the campaign. In this case, then, common sense would have led to an overestimation of the ease and rapidity with which a single campaign event can alter voters' intentions.

In the examples given in Chapter 1, each of the researchers subjected their ideas and explanations to empirical verification. They observed the phenomena they were trying to understand, recorded instances of the occurrence of these phenomena, and looked for a pattern in their observations that was consistent with their expectations. In other words, a body of empirical evidence was accumulated and presented that gave others an empirical basis for acquiring knowledge about some political phenomenon.

Scientific knowledge is also directive in terms of its scope and immediate purpose. The empirical research used to acquire scientific knowledge addresses what is, why, and what might be in the future. It does not typically address whether what is, is good or bad, or what ought to be, although it may be useful in making these types of determinations. Political scientists use the words normative and nonnormative to express the distinction. Normative knowledge evaluates what is and prescribes what ought to be. Scientific knowledge is nonnormative.

This is not to say that empirical research is conducted in a valueless vacuum. A researcher's values and concerns will affect the topic of research interest, and his or her beliefs will affect the focus of the research or the population chosen for observation. For example, a researcher may feel that crime is a serious problem and that stiffer penalties for those who commit crimes will deter would-be criminals, thereby reducing the crime rate. But the test of the proposition that stiffer penalties will reduce the crime rate should be conducted in such a way that the values of
the researcher do not bias the results of the study. It is the responsibility of the researcher to test the proposition without prejudice. It is the responsibility of others to evaluate the research to ascertain whether the conclusions drawn by the researcher are justified and based on meaningful information. Scientific principles and methods of observation help both the researcher and those who evaluate the researcher’s conclusions to perform their tasks. Within the discipline of political science as well as in other disciplines, the relationship between values and scientific research is frequently debated. We shall have more to say about the subject later in this chapter.

Even though political scientists may strive to minimize the impact of biases when conducting their research, it is difficult, if not impossible, to achieve total objectivity. A fourth characteristic of scientific knowledge, however, helps to identify and weed out biases that may enter research activities. Scientific knowledge is transmissible, by which we mean that the method of discovering knowledge is made explicit so that the research can be analyzed and replicated. Scientific knowledge is transmissible “because science is a social activity in that it takes several scientists, analyzing and criticizing each other, to produce more reliable knowledge.” The researcher must specify what data were collected and how they were analyzed. A clear description of research procedures allows others to independently evaluate the worth of the research. It also allows other researchers to collect the same information and test the original propositions themselves. If the original results are not replicated using the same procedures, they may be incorrect.

This does not mean that scientific knowledge is accumulated primarily through the exact repetition of research by many researchers. Often research procedures are changed intentionally to see whether similar results are obtained under different conditions. Consider, for example, two studies concerning the connection between TV violence and antisocial aggressive behavior among children who view TV. One study compared children in two Canadian towns, one with TV, one without. The researchers found that younger children (ages eleven and twelve) from the TV town were less, not more, aggressive; for older children (ages fifteen and sixteen) there was no difference. This research was subsequently criticized because the two towns were not matched closely enough and because other factors related to aggressiveness among children, such as differences in school discipline, were not considered. Another study was then conducted involving children in a single town, thus avoiding the problem of matching. Children were divided into “high” and “low” TV viewers, with high viewers found to be slightly more aggressive than low viewers. Yet in this study no attempt was made to assess the amount of violence actually seen on TV by the high viewers. Low viewers could have watched particularly violent programs, so that the difference between the groups would have been minimized. The method of measuring aggressiveness was also suspect.

Thus flaws in a research study often lead others to doubt the results and to design their own tests. This would not be possible, however, if researchers did not clearly specify their research design and methods. This description of methods and results permits a better assessment of results and allows others to conduct further studies with adjustments in design and measurement. The results of these new studies can then be compared with the earlier results and a body of evidence concerning the political phenomena in question may be accumulated. In each of the examples in Chapter 1, the researchers revealed enough information about their methods and procedures that others could evaluate the strengths and weaknesses of their research. The way of measuring certain phenomena could be questioned and improved, the range of situations studied could be broadened, and alternate explanations could be tested by other researchers. In this way evidence on a particular aspect of social and political life may be accumulated and, it is hoped, become increasingly informative.

Another important characteristic of scientific knowledge is that it is general. Knowledge that describes, explains, and predicts many phenomena is more valuable than knowledge that addresses few phenomena. For example, the knowledge that states with easier voter registration systems have higher election turnout rates than states with more difficult systems is preferable to the knowledge that Wisconsin has a higher turnout rate than Alabama. To know that familiarity with a candidate, rather than similarity of party affiliation, increasingly influences how people vote is general knowledge. It is more useful to someone seeking to understand the outcomes of elections than is the knowledge that John Doe, a Democrat, voted for the Republican candidate for Congress and knew the Republican’s name but not the Democrat’s. Knowing that Pennsylvania, which has a safety inspection program, has a lower automobile fatality rate than Georgia, which does not, is less useful to the legislator debating the worth of inspection programs than knowing that inspected states in general have lower average fatality rates than uninspected states. General knowledge is preferred, then, because it accounts for a wider range of phenomena than specific knowledge and helps us understand more of the world in which we live.

Statements that communicate general knowledge are called empirical generalizations; they summarize relationships between individual facts. For example, the statement that states with easier voter registration systems have higher turnout rates than states with more burdensome systems connects information about voter registration systems and voter turnout rates in individual states and summarizes that information for many states.
Another characteristic of scientific knowledge is that it is explanatory. It provides a reason for a behavior, attitude, or event; it answers a "why" question. For example, one might explain differences in voter turnouts among states by differences in the complexity of their voter registration systems. As we have seen, scientific knowledge requires the accurate description of attributes and behaviors based on careful observation and measurement. Knowing facts is important—for example, that 45 percent of registered voters voted in a particular election, that 11.2 percent of all teenagers in a city are unemployed, or that the amount of money spent on national defense rose by 2.5 percent. But most political scientists are not content just to describe a factual situation. They are usually interested in identifying the factors that account for or explain patterns in human behavior.

For example, Gurr’s theory of relative deprivation offers an explanation of why political violence occurs and why certain combinations of expectations and value attainment are associated with political violence. It is more than a description of where violence occurs. Other political scientists may try to explain why legislatures in some states adopt particular policies, why some people run for office, and why some cities are fiscally more solvent than others.

Accurate description is the basis for observing patterns and regularities in phenomena and for explaining them. One must have as accurate a picture as possible of what is before one can determine why it is so. History is replete with examples of erroneous explanations that were developed on the basis of inadequate observation. These explanations have been rejected and new ones have taken their place often as the result of technological advances. Recent space exploration, for example, has made it possible to observe many more phenomena in astronomy than ever before and has led to the reappraisal of many theories regarding Saturn’s rings, Jupiter’s moons, and Mars’s canals. In political science the development of sample surveys has allowed political scientists to study a wide range of human attitudes that previously had been virtually impossible to observe.

Explanatory knowledge is important because it is the basis for prediction, the application of explanation to events in the future. In fact, many consider the ultimate test of an explanation to be its usefulness in prediction. Prediction is an extremely valuable type of knowledge since it may be used to avoid undesirable and costly events and to achieve desired outcomes.

But exactly how accurate do scientific explanations need to be? Do they have to account for or predict phenomena 100 percent of the time? Some accept the idea of probabilistic or statistical explanation in which it is not necessary to explain or predict a phenomenon with 100 percent accuracy. But others believe an explanation is acceptable only if it explains or predicts what it purports to explain or predict all the time. In political science, explanations rarely account for all of the variation observed in attributes or behavior. Probabilistic explanations are usually considered acceptable, as they are in other disciplines as well.

Explanation is the primary purpose of a theory. A “theory’s major function is... to explain singular facts and occurrences, but perhaps more importantly to explain empirical generalizations.” Empirical generalizations linking phenomena are a basis for developing explanations. Theories go beyond empirical generalizations, however; they are more powerful and abstract. As Isakst states, “A theory can explain empirical generalizations because it is more general, more inclusive than they are.” Theories also have two other functions: “to organize, systematize, and coordinate existing knowledge in a field” and to “predict an empirical generalization—predict what a particular relationship holds.” For example, a theory of voting may explain voter turnout by proposing that people generally weigh the costs and benefits of voting: the higher an individual’s cost of voting in comparison with the benefits, the less likely he or she is to vote. The more empirical generalizations a theory systematizes and organizes, and the more of them it suggests or predicts, the stronger the theory.

Theories of politics generate the excitement in political science research and stimulate our study of politics. In our quest to understand our lives and the world around us, we create order out of complexity, even chaos, we turn to theories. Not all of us turn to the same theories, however, and that contributes to the excitement of studying politics. Each theory offers a different view of politics or focuses our attention on a different set of political phenomena.

For example, Bruce A. Williams and Albert R. Matheny evaluate several competing theories in their examination of variation in state regulation of hazardous waste disposal. Regulation of hazardous waste disposal is an example of “social regulation” that imposes costs on a concentrated group to benefit a wider latent group—the public. Improper waste disposal imposes costs on the environment and human health. These costs, known as negative externalities, are not reflected in the price of a product. Avoiding or preventing negative externalities means imposing substantial costs on industry for safe disposal. There are at least three theories to explain and predict the reaction to negative externalities in terms of the amount of social regulation.

According to economic theory, negative externalities are a type of market failure; that is, the market fails to allocate resources efficiently. When this happens, government regulation of the market is justified. The market failure theory of government regulation would predict that social regulation would be related to the severity of the market failure and that the costs to regulated industries should be equal to the costs or harms.
created by unsafe hazardous waste disposal.

Others would argue that social regulation does not correspond only to the presence or magnitude of market failures. Rather, social regulation may be the result of political behavior. Some predict that exaggerated claims about dangers imposed by market failures must be made to generate enough public awareness and support for regulation and that, consequently, the resulting regulations impose unnecessarily high costs on industry. In contrast, others argue that industries oppose regulation and can dominate the regulatory process by threatening economic slowdown, unemployment, even change of location. The political strength of an industry is related to its importance to the economy and level of government, considering the regulation. Threats to relocate have more of an impact at the local or state level than at the national. Thus regulation may be related to conditions of industry dominance, not the extent of market failure or actual pollution.

A third theoretical position states that industry dominates the regulatory process, but it does not necessarily oppose all regulation. According to this perspective, industry supports regulation as long as the costs of regulation can be shifted to government away from industry. This regulatory outcome is called the socialization of the costs of production and is predicted by neo-Marxists who maintain that many private industries could not make a profit without evading actual production costs. They also argue that effective regulation and avoidance of negative externalities is not possible without fundamental institutional reform of both government and the economy.

These, then, are quite different views of why and how much government regulation occurs. Each view has something different to say about the power of public interest groups and industry groups and the outcome of social regulatory efforts. The conflicting beliefs about politics they represent fuel many a debate about environmental regulations and the performance of government and the economy. Researchers investigating examples of social regulation may be far more interested in determining which theory seems to fit than in the actual amount and consequence of particular regulatory programs. Researchers may become quite attached to a particular theory and be convinced that it is the correct theory, even if they are aware of our final characteristic of scientific knowledge.

This final characteristic is that scientific knowledge is provisional. Future research may always demonstrate the inadequacy of our understanding of a phenomenon up to that point. New observations, more accurate measurements, improvements in research design, and the testing of alternative explanations may reveal the limitations or empirical inadequacies of a body of scientific knowledge. One must always remain open to the alteration and improvement of the understanding of human phenomena. To say that scientific knowledge is provisional does not mean that the evidence accumulated to date can be readily ignored. It does mean, however, that future research could always significantly alter our present understanding. Often when people think of science and scientific knowledge they think of scientific "laws." A scientific law is a "generalization that was tested and confirmed through empirical verification." Generally, law refers to generalizations that have held up under repeated testing. The provisional nature of scientific knowledge alerts us to the possibility that future observations may contradict currently accepted laws.

So far we have described the characteristics of scientific knowledge. In the next section we will discuss two ways in which this knowledge is typically produced: through induction and deduction. Empirical observation and theories are key elements in both of them.

Acquiring Scientific Knowledge: Induction and Deduction

Induction is the process of reasoning from specific observation to general principle or theory. In induction, observation precedes theory. The researcher objectively observes the phenomena of interest and records those observations. Upon studying them, the researcher notices a pattern or regularity in the data and develops a theory that explains why the pattern has occurred. This theory may also offer an explanation for patterns in other related observations. For example, imagine that you have made the following three observations. First, the Bemba of South Central Africa live a life of marginal subsistence consisting of nine months of abundance and three months of hunger. Despite deplorable conditions, there is no outbreak of violence or protest among the tribe during the three-month hunger period. Second, the income of American blacks compared with that of whites of equal education rose rapidly during the 1940s and early 1950s but then declined so that half the relative gains were lost by 1960. Violence broke out among blacks in the 1960s. Third, political violence in Europe occurred during the growth of industrial and commercial centers, despite the fact that opportunities for alternatives to the hard life of peasants were created.

In two cases the objective well-being of people declined, but in only one did violence break out. In the other there was no decline in the objective well-being of the people yet violence did occur. Let's assume that in seeking an explanation in the first case, you reason that the cycle of the seasons and its ensuing periods of feast and famine had been experienced for many years and was unlikely to change. In the second case you reason that blacks expected to maintain and continue the economic gains they had made in the past decade. And in the third case you reason
that perhaps during industrialization all people expected to improve their living conditions, yet some in society were benefiting much more from increased industry and commerce than others. Based on this reasoning, you could conclude that the two last cases were similar because there was a discrepancy between expected and actual conditions, while in the first there was no discrepancy. From this you might develop the general theory that a discrepancy between expectations and attainable conditions causes discontent, which leads to political violence. Thus you might induce the theory of relative deprivation from a few observations of specific cases of deprivation and violence. Generally speaking, it is difficult to point to examples of pure induction since often a researcher will start with a hunch and proceed to collect information that he or she expects to show certain patterns in line with the hunch. A hunch is not a full-blown theory, yet it is more than starting with observations alone.

In the second mode of scientific inquiry, deduction, theory precedes observation. Deduction is the process of proceeding from general principles or theory to specific observations. On the basis of theory certain phenomena are predicted. Then events are observed and measured to see if they occur as predicted. For example, to test the theory that the earth is flat, it should be possible to find the earth's edge and to sail in a straight line directly from a starting point to the edge of the earth and back. Or take the theory in psychology—the theory of imitation—that new behavior is partly acquired by copying others. If this theory is correct, an increase in the portrayal of sex and violence on TV could be expected to lead to an increase in such behavior among viewers. To test this theory one might take two groups with similar sex habits or levels of aggression, and expose one group but not the other to TV programs with sex and violence. If the former group exhibits an increase in sexual activity and aggressive or violent behavior, but the latter does not, then one could conclude that TV did affect viewer behavior in accordance with the theory of imitation.

Scientific research typically involves both deduction and induction. Thus a researcher may start with a theory and deduce certain phenomena that he or she will attempt to observe. If the observations are not quite as expected, some modification of the theory will be made and the revised theory subjected to further testing. Sometimes the theory may have to be discarded, and on the basis of observations a new theory will be induced.

For example, Ptolemy's theory that the heavens revolved around the earth was initially developed two centuries before Christ. It was quite successful at predicting the changing positions of planets and stars, but it was not completely successful at predicting other astronomical phenomena. There were many discrepancies between actual astronomical observations and predictions derived from Ptolemy's theory. Astronomers responded at first by making adjustments in Ptolemy's system of com-
pounded circles. Changes in the theory to correct discrepancies in one place created discrepancies in other places, however. Over the centuries the theory became increasingly more complex yet no more accurate. Finally, by the sixteenth century, it was concluded that the Ptolemaic system was so complex and inaccurate that it couldn't be true of nature. Copernicus then suggested an alternative heliocentric theory, that the planets revolved around the sun. This theory was simpler and more accurately accounted for a variety of astronomical phenomena.

A major change in a prevailing scientific theory such as the substitution of the Copernican theory of a heliocentric galaxy for the Ptolemaic view of an earth-centered universe is referred to as a scientific revolution. Such an event can be traumatic, as scientists debate the consistency between the accumulated evidence and the competing theories. In some cases it takes years for the scientific community to conclude that a new theory is better at accounting for, and explaining, the available evidence.

A good example of social science research that involves both induction and deduction is the work of two psychologists regarding news coverage and social trust. For some time they had been studying social trust by observing the rate at which people would return wallets dropped in New York City streets to the addresses of the owners identified inside. To observe this phenomenon the researchers would periodically drop a number of wallets in various locations and wait and see how many were returned. Typically, half the wallets dropped were eventually returned. However, one day something happened that had never happened before: none of the wallets was returned. This unexpected result led them to search for a plausible explanation for the result. Hence, they were involved in developing an explanation based on an observation—induction.

It so happened that the day this particular wallet drop occurred was the day Robert Kennedy was assassinated in June 1968. They wondered: Could the assassination have something to do with the failure to recover any of the dropped wallets? Perhaps the news coverage of the event made people upset, socially mistrustful of strangers, and unwilling to help people whom they did not know or had not seen. Hence they hypothesized that exposure to “bad” news makes people less socially trusting and cooperative.

To test this hypothesis the researchers devised a series of experiments in which people were divided into two groups and were subtly exposed to “bad” or “good” news broadcasts. Then they were asked to reveal their attitudes toward other people and to play a game with other people that allowed the observation of their cooperativeness. Thus a general theory was being tested with research designed to measure the occurrence of certain predicted observations—deduction.

The experiments demonstrated that those exposed to bad news were, indeed, less socially trusting and cooperative, confirming the researchers'
expectations. Both induction and deduction had been involved in accumulating an empirical, verifiable, transmissible, explanatory, general (yet provisional) body of evidence regarding an important social phenomenon.

Applying an existing theory to new situations, deciding which phenomena to observe and how to measure them, and developing a theory that explains many more things than the specific observations that led to its discovery are all creative enterprises. Unfortunately it is difficult to teach creativity. But being aware of the processes of induction and deduction, and keeping in mind the characteristics of scientific knowledge, will make your own evaluation and conduct of research more worthwhile.

Can Politics Be Studied Scientifically?

We have implied throughout this chapter that politics can and should be studied scientifically. Some people question this assumption, however. Political science involves the study of human beings and the discovery of explanations for the political behavior that they exhibit. This discovery of regularities and patterns of behavior in politics requires that human beings act consistently or in a nonrandom, nondosynchronous, or discoverable manner. But if human beings do not act predictably, political scientists cannot explain and predict their political behavior.

Even if we accept that human beings are generally predictable, some persons may deliberately act in an unpredictable or misleading way. This problem may be encountered among subjects "cooperating" in a research project. For example, a person may figure out that he or she is part of an experiment to test a theory about how people will behave when faced with a particular situation. That person may deliberately act in a fashion not predicted by, or in conflict with, the theory, or that person may alter his or her behavior to conform to what the researcher is looking for. Similarly, a person may never reveal what he or she is really thinking, or what his or her behavior in the past has been or would be in the future. In other words, our ability to observe accurately the attributes of people may be severely limited. For example, it is difficult to develop explanations for why some people use certain drugs when measures of how often people use drugs (especially illegal ones) are notoriously inaccurate.

Measurement problems also arise in political science because the concepts of interest to many political scientists are abstract and value laden. Thus it is difficult to measure objectively these concepts, and value disagreements lead to conflict over which measure to use. For example, one measure of unemployment counts persons who are out of work and actively seeking employment. Some argue that this measure underestimates unemployment because it does not include those who are discouraged from failure to find a job that they no longer are actively seeking employment.

Political scientists must also deal with the fact that human beings and their behavior are complex, perhaps fundamentally more complex than the subject matter of other sciences (bacteria, elements, subatomic particles, insects, and so on). This complexity poses difficulties for the researcher. For example, the complexity of human behavior has been an obstacle to political scientists' discovery of general theories to accurately explain and predict a wide range of political behavior. A theory with broad applicability might be extremely cumbersome. Specification of many variables might well be necessary to apply the theory to a large number of situations with any acceptable degree of accuracy. On the other hand, due to the complexity of human behavior, a theory that appears to be relatively simple and elegant may be attacked on the ground that it is fairly easy to find exceptions to it. Certainly no empirically verified generalizations in political science to date match the simplicity and explanatory power of $E = mc^2$.

Political scientists, like other scientists, must deal as well with obstacles to empirical observation. Because political science is concerned with human behavior and its products, data needed to test theories may be extremely hard to obtain. For instance, those who have the needed information may not want to release it for political or personal reasons. Moreover, because human beings are the subjects of analysis in the social sciences, researchers must contend with ethical considerations. Obtaining certain information may interfere with an individual's right to privacy, for example. In many studies, individuals are informed about the purpose of the research; consequently, some people may not answer questions honestly or may not behave naturally. Others who know the true purpose of a study may not be willing to participate at all. Similarly, some critical experiments to test a theory may manipulate human subjects. Testing the impact of incarceration on subsequent lawful behavior, for example, could conceivably involve placing innocent people in prison. Fortunately, researchers are not given such power to interfere in people's lives. Other obstacles to observation may arise from technological limitations on measurement and analysis. For example, computers have facilitated the storage and analysis of more information than ever before, yet it is still difficult to measure accurately attitudes and behavior that are socially undesirable, that typically occur in private, or that occur over an extended period of time.

Despite the difficulties of studying politics scientifically, the scientific approach has had a profound effect on the discipline of political science. This can be seen by taking a look at the differences between the scientific approach and other approaches to the study of politics. Even if one agrees that politics can be studied scientifically, with the methods and approaches described in this book, important criticisms can be made concerning the application of scientific methods to
the study of politics. These are discussed in the remainder of this chapter.

Political Science as a Discipline

The study of politics is often divided into two historical periods: the period of traditional political inquiry and the period of modern or behavioral political science. Behavioral political science, which utilizes the scientific method of discovering knowledge, did not appear until the 1950s in the United States, although certain developments that are responsible for its appearance took place earlier.

Traditional Political Science

There were three major approaches to the study of politics during the period of traditional political inquiry: historical, legalistic, and institutional. The historical approach produced detailed descriptions of the historical developments leading to political events and other phenomena. The legalistic approach involved the study of constitutions and legal codes. The institutional approach yielded descriptions of the powers and functions of political institutions (legislatures, executive branches, or courts, for example). In general, traditional political science focused on formal governmental institutions and their formal powers. Legal and historical documents, such as constitutions, proclamations, and treaties, were studied to trace the development of international organizations and key concepts, such as sovereignty, the state, federalism, and imperialism. Informal political processes, the exercise of informal power, and the internal dynamics of institutions were generally ignored.

Under the traditional approach, the study of politics was usually subsumed in colleges and universities under the disciplines of history and philosophy. Political theories concerning the nature of man and politics, the purpose and most desirable form of government, and the philosophy of law were the province of philosophy departments. When separate departments for the study of politics appeared, they were frequently called departments of government, reflecting the emphasis on governmental institutions rather than on political processes and behavior. In fact, some universities still have government departments.

Traditional political science was primarily descriptive rather than explanatory. While political theorists offered intriguing and well-reasoned theories of politics, these theories or explanations were usually not subjected to extensive empirical verification. Knowledge in political science was not acquired scientifically, nor was there a felt need to produce knowledge that had the characteristics of scientific knowledge.

Modern Political Science

The appearance of the scientific study of politics in the United States can be attributed to several developments. First, numerous European social scientists and theorists came to the United States in the 1930s, many of whom were skilled in the use of new, more scientific research methods. Second, war-related social research in the following decade promoted the exchange of ideas among scientifically minded persons from the disciplines of political science, sociology, psychology, and economics. This research effort was aided by a related development: the collection of large amounts of empirical data and the development of technology and practices to store and process this information. For example, Paul Lazarsfeld pioneered the use of large-scale sample surveys to study voting behavior in 1940, continued to refine the technique while working for the federal government during World War II, and applied survey research methods again during the 1948 and 1952 presidential elections.

Much of the post-1950 political science research has focused on the political behavior of individuals and groups, hence the term behavioral political science. Unlike traditional political science, modern political science embraces the scientific method. This relationship to the scientific method is illustrated by the assumptions and objectives of behavioralism, which David Easton outlined in his 1967 article "The Current Meaning of Behavioralism." A few of them are listed here:

There are discoverable uniformities in political behavior. These can be expressed in generalizations or theories with explanatory and predictive value. Means for acquiring and interpreting data need to be examined self-consiously, refined, and validated. Precision in the recording of data and the statement of findings requires measurement and quantification. Ethical evaluation and empirical explanation involve two different kinds of propositions that, for the sake of clarity, should be kept analytically distinct. Research ought to be systematic.

Behavioral political science assumes and advocates the search for fundamental units of analysis that can provide a common base for the investigation of human behavior by all social scientists. For example, some political scientists suggest that groups are an important unit on which to focus, while others suggest that decision making and decisions are. There is hope that a few units of analysis will be found and focused upon in much the same way as physicists and chemists focus on atoms, molecules, and the like.

The reaction to behavioral and empirical political science has not been entirely positive. Critics of empirical political science point to the trivial nature of some applications of scientific methods to the study of politics. Common sense would have told the average person the same
thing, they argue. As explained earlier, however, there is a difference between common sense knowledge and scientific knowledge. To build a solid base for further research and accumulation of scientific knowledge in politics, common sense knowledge must be empirically verified. Common sense is, after all, frequently wrong.

Some political scientists have also been concerned about the prominence of nonpolitical factors in explanations of political behavior. Psychological explanations that stress the effect of personality on political behavior or economic explanations that attempt to show how people behave in terms of costs and benefits, incentives and disincentives, offer competing ways of understanding political phenomena for those used to studying political institutions and political philosophies. To them it looks like political inquiry is being fundamentally altered by the concepts, language, and methods of other disciplines.

A more serious criticism of the scientific study of politics is that it leads to a failure to focus enough scholarly research attention on important social issues and problems. Not only is this research conducted in an objective, value-free, scientific fashion, some say, but the values, moral questions, and philosophical topics to which the research can be related are seldom considered. The implications of research findings for important public policy choices are rarely addressed. Some also argue that the quest for scientific knowledge of politics has led to a focus on topics that are quantifiable and relatively easy to verify empirically but that are not related to significant, enduring, and relevant social concerns.

The reaction and challenge to behavioralism by the late 1960s led the president of the American Political Science Association to declare a "postbehavioral revolution." Postbehavioralism included the following tenets:

1. Substance must precede technique. If one must be sacrificed for the other—and this need not always be so—it is more important to be relevant and meaningful for contemporary urgent social problems than to be sophisticated in the tools of investigation.

2. Behavioral science conceals an ideology of empirical conservatism. To confine oneself exclusively to the description and analysis of facts is to hamper the understanding of these same facts in their broadest context. As a result, empirical political science must lend its support to the maintenance of the very factual conditions it explores. It unwittingly purveys an ideology of social conservatism tempered by modest incremental change.

3. Behavioral research must lose touch with reality. The heart of behavioral inquiry is abstraction and analysis and this serves to conceal the brute realities of politics. The task of post-behavioralism is to break the barriers of silence that behavioral language necessarily has created and to help political science reach out to the real needs of mankind in time of crisis.

4. Research about and constructive development of values are inextricable parts of the study of politics. Science cannot be and never has been evaluatively neutral despite protestations to the contrary. Hence to understand the limits of our knowledge we need to be aware of the value premises on which it stands and the alternatives for which this knowledge could be used.

5. Members of a learned discipline bear the responsibilities of all intellectuals. The intellectuals' historical role has been and must be to protect the humane values of civilization. This is their unique task and obligation.

6. To know is to bear the responsibility of acting and to act is to engage in reshaping society. The intellectual as scientist bears the special obligation to put his knowledge to work.

7. If the intellectual has the obligation to implement his knowledge, those organizations composed of intellectuals—the professional associations—and the universities themselves, cannot stand apart from the struggles of the day. Politicization of the professions is inescapable as well as desirable.

The postbehavioral revolution has brought about renewed interest in normative political philosophy, that is, in questions of "what ought to be" rather than "what is." Others have responded by turning their attention to public policy, the policy-making process, and policy analysis. Many political scientists who study these topics apply scientific methods to socially relevant and important questions.

Postbehavioralism has not silenced critical reflection upon political science as a discipline and the impact of incorporating scientific method in the study of politics. New concerns continue to arise. For example, some lament the failure of government to benefit from the knowledge and perspectives of political scientists and the overreliance on economists and econometric methods in policy making.

One important challenge to research in political science (as well as in other social science disciplines such as sociology) has come from feminist social scientists. Among the criticisms that have been raised is that "the nature of political action and the scope of political research have been defined in ways that, in particular, exclude women as women from politics." [Emphasis added.] Accordingly, "What a feminist political science must do is develop a new vocabulary of politics so that it can express the specific and different ways in which women have wielded power, been in authority, practised citizenship, and understood freedom." Even short of arguing that political science concepts and theories have been developed from a male-only perspective, it is all too easy to point to examples of gender bias in political science research, such as failure to focus on policy issues of importance to women, assuming that findings apply to everyone when the population studied was predominantly male, and bias in survey question wording.
Conclusion

In this chapter we have described the characteristics of scientific knowledge and the scientific process of investigation. We have presented reasons why political scientists are attempting to become more scientific in their research and have discussed some of the difficulties associated with empirical political science. We have also touched on questions that exist about the value of the scientific approach to the study of politics. Despite these difficulties and questions, the empirical approach is widely embraced, and students of politics need to be familiar with it. In the next chapter we shall begin to examine how to take a general topic or question about some political phenomenon and develop a strategy for investigating that topic scientifically.

Notes

2. Ibid., 107.
3. Ibid., 106; see also 67.
6. Isaac, Scope and Methods, 30.
7. Ibid., 31.
9. Isaac, Scope and Methods, 103.
11. Isaac, Scope and Methods, 167.
12. Ibid.
13. Ibid., 167, 169.
17. Isaac, Scope and Methods, 297.
18. Gurr, Why Men Rebel, 57.
19. Ibid., 54.
20. Ibid., 51.
21. For a discussion of the theory of imitation and its role in explaining possible effects of increased sex and violence on TV, see Eysenck and Nias, Sex, Violence and the Media, 55-59.
22. This example is based on the discussion in Kuhn, Scientific Revolutions, 68-69.
23. Ibid.
25. For further discussion of complete and partial explanations, see Isaac, Scope and Methods, 143.
27. Isaac, Scope and Methods, 34-38.
34. See McCoy and Playford, eds., A Political Ecology.
37. Isaac, Scope and Methods, 45.
38. Ibid., 46.
39. For example, see David M. Ricci, The Tragedy of Political Science: Politics, Scholarship, and Democracy (New Haven, Conn.: Yale University Press, 1984).