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# 2

## STUDYING POLITICS

### LEARNING OBJECTIVES

- 2.1 Recognize the value of evidence-based reasoning.
- 2.2 Understand the process of scientific inquiry.
- 2.3 Understand how theories and hypotheses are developed in political research.
- 2.4 Understand the roles that intuition and evidence perform in political science inquiry.
- 2.5 Recognize intended and unintended biases in research and their consequences for our understanding of politics.
- 2.6 Describe the role of normative theory in political science.

What explains the breakdown of democracy in various countries? Why is voter turnout low in legislative elections? What explains voter apathy? What accounts for the inability of government to enact a sweeping health care reform? Why do countries go to war? How can we explain significant variations in economic wealth within and across countries? These are some of the common questions political scientists seek to answer. How do political scientists answer the questions they have?

Most, if not everyone, reading this chapter have had some exposure to science, or to be more precise, the scientific method. This exposure likely came in the form of understanding and explaining the natural world in subjects like biology, chemistry, and physics. We envision people in lab coats conducting experiments in a laboratory or others out in the field taking geological samples or studying animal behavior.

Humans are also members of the animal kingdom. Therefore, it should not be a surprise that a researcher can study human behavior, human-created institutions, and societies using the same methods. In other words, the methods scientists employ to explain why planets form orbits, water dissolves most substances, and some bacteria are helpful for our digestion can also help us explain, and perhaps predict, political phenomena.

The study of human interactions and societies falls under the label of **social science**. When we study the political dimension of humanity, we are now in the realm of political science. Simply put, **political science** is the examination of politics using the scientific method.



## EVIDENCE-BASED CLAIMS

### LEARNING OBJECTIVE

#### 2.1 Recognize the value of evidence-based reasoning.

You may be surprised to know that contemporary political science predominantly uses the scientific method to research and test claims. Is the scientific method the only way to examine politics? The answer is no. Over the many millennia of human existence, people have used many different methods to explain why people do the things they do. Ideologies are one example, which we will discuss in Chapter 3. It is common for people to make arguments based on what they believe rather than what the data dictate. People in authority sometimes propose ideas as if they are facts when there is often little or no evidence to support them. Evidence-based claims, however, helps us to demystify our world. Answering questions in this way helps us become better equipped to solve problems facing humanity.

The study of the natural world also had a nonscientific phase. There was a time when many people believed that bad air caused diseases like the plague, which periodically killed off large numbers of people. People believed that they could protect themselves from evil odors by wearing masks with long chambers filled with nice smelling herbs and flowers. For centuries, authority figures told people that this was true when in fact it was a nice story that had no evidence supporting it.

Using the scientific method, however, researchers discovered that the plague results from the bacterium *Yersinia pestis*, which attacks our immune system, producing symptoms that our bodies cannot tolerate and leading to death if not treated. Researchers also discovered that the disease was not airborne. Instead, it gets into our bodies through flea-bites. Fleas, which rats carry, pass the bacteria from animals to people and from people to people by drawing in blood from one and then passing the bacteria to another with the next bite. The medieval doctors usually did not contract the disease because they covered themselves from head to toe and therefore did not leave skin open for fleabites. The masks



Plague masks were worn by medieval doctors, such as the one seen here, due to the belief that the illness was caused by bad air. It was not until scientific studies conducted hundreds of years later revealed that these assumptions were false and it became known that the plague was in fact spread by flea bites.

"Historiae anatomicae" by Thomas Bartholin. In the public domain. [https://commons.wikimedia.org/wiki/File:Paul\\_F%C3%BCrst,\\_Der\\_Doctor\\_Schnabel\\_von\\_Rom\\_\(Holl%C3%A4nder\\_version\).png](https://commons.wikimedia.org/wiki/File:Paul_F%C3%BCrst,_Der_Doctor_Schnabel_von_Rom_(Holl%C3%A4nder_version).png)

did not prevent the disease, but because they usually did not get sick, authorities kept the “bad air” idea alive. Instead, the scientific method showed that if you get rid of the fleas by removing rats that passed them around, then you could solve the problem.

The COVID-19 pandemic also helps us understand the use of the scientific method. At first, we puzzled as to how the virus spread. Researchers have shown that the virus spreads through tiny droplets in the air and that wearing a mask, distancing in social gatherings, and limiting large gatherings will slow down the spread of the disease. Along with vaccinations, the knowledge of the airborne transmission helps us develop public policies that guide people to the behavior needed to control the spread of COVID-19. Questions of interest to political scientists is why some locations have mandates to limit its spread and why some people do not wish to follow such mandates if they exist.

Today, many political scientists study politics scientifically. In examining data and drawing conclusions, we may sometimes find evidence that go against conventional wisdom on a topic or issue. We may discover something similar to what plague researchers found—what we think is causing a problem may be untrue even if we strongly believe it to be the case. The point is to solve problems based not on what we assume to be true but where the evidence takes us.

## STUDYING POLITICS SCIENTIFICALLY

### LEARNING OBJECTIVE

#### 2.2 Understand the process of scientific inquiry.

How many of your political beliefs have a basis in a sound scientific study? Or, like the average medieval subject, do you hold beliefs that sound reasonable and yet have no basis in reality? We first introduce the basic steps in explaining political phenomena scientifically. We then move to a deeper understanding of scientific inquiry in the study of politics in the next section.

Karl R. Popper (1902–1994), one of the most influential philosophers of science of the twentieth century, emphasized the quest for truth rather than the possession of absolute knowledge in defining science. According to Popper, all human knowledge is tentative and thus needs continuous testing. The **scientific method** is a systematic way to test hypotheses and answer questions using observable data. We say the scientific method is systematic because it has specific steps accepted by the community of scholars that they can repeat to see if the findings are valid. Replication is critical because a finding may be a coincidence. If others can repeat the steps and get the same or similar results, then we have more confidence in the findings.

#### *The Steps of the Scientific Method*

1. *Come up with a research question.*
2. *Develop a theory-based hypothesis that will answer the research question.*
3. *Test the hypothesis by observing the values of your variables while considering other factors.*
4. *Compare your results with your expectations.*
5. *Draw conclusions.*

The first step is to be curious about why certain things happen in the political world. Researchers look around the local, regional, national, or international landscape and notice differences and similarities. In the political world, important questions abound. Why are some countries rich while others are poor? Why are some countries democracies while others are not? Why do some countries fight many wars, but others do not? Why do some cities have cleaner air than other cities? Why is government corruption rampant in certain countries? Why do countries sometimes go to war with each other but resolve disputes peacefully using diplomatic means in other times? What institutional arrangements strengthen voters' ability to hold elected politicians accountable? Why do racial and gender discriminations persist? These are just a small sample of questions we will answer in this book.

To figure out why things are the way they are, political scientists do some preliminary research. First, they may notice patterns and come up with some starting ideas. They make observations and examine previous studies to see what other people have discovered. Perhaps someone already saw the same pattern. Perhaps others discovered that the pattern exists, yet more questions came up. Researchers can then use this knowledge to refine their ideas and formulate an explanation that is new and interesting.

Suppose we are interested in figuring out why some countries sign free trade agreements and others do not. A **free trade agreement** is a treaty between two or more countries that reduces barriers to imports and exports among them. Such agreements allow goods and services to move more freely among countries. Let's say that we notice the following pattern: Countries that sign free trade agreements have large businesses organized into powerful associations. These associations try to convince political leaders that greater international trade would help the domestic economy because more exports mean more jobs. After doing some reading, the researcher discovers that no one examined the connection between signing a free trade agreement and large business associations.

The researcher, then, develops or uses an existing explanation, a **theory**, as to why this connection would be so important. Briefly, a theory is a possible explanatory answer to a question. We can also define a theory as an estimation of how the world works. Formally, a theory is a set of interrelated concepts and propositions that explain or predict events and behaviors. A theory provides a systematic way of understanding events, behaviors, and other types of phenomena.

A **scientific theory** is a theory that is well tested using the scientific method and offers a broad explanation of a natural or social phenomenon. As discussed in the introduction of this chapter, not all ideas or explanations become scientific theories. Some ideas are simply held as true (which is often the case with religious beliefs), and others have no ground in empirical reality. In contrast, theories in political science should be testable, and should be falsifiable if evidence indicates the contrary. However, theories typically comprise multiple concepts and propositions and may be too complex to test them in one setting.

To create an estimation of the world, we explain how actions and concepts connect with each other. Theories are important because they can generate hypotheses that explain political phenomena as small as a local election result or as large as the initiation of a global war. The logic of a theory will produce a hypothesis or several hypotheses. A **hypothesis** is a simple and clear statement that describes a presumed relationship between (usually) two variables that can be tested with empirical data. A **variable** is a measurable property or trait of people or things that can take on different values. The values of a variable may change across space and time. By space, we mean

across individuals, groups, and geographic regions—regions within a country, across countries, or across world regions. Perhaps we wish to compare different counties or regions within a country or compare a set of countries with respect to the strengths of their democratic institutions. If a researcher is interested in voting decisions of individuals, they may compare voting behavior of a sample of voters. Variables also change values across time. Researchers use many different time measurements: years, quarter years, months, or days. If you observe an item that does not change across space and time, then it is not a variable; it is a constant.

A good example of a variable would be wealth. We can measure the wealth of people or countries. If we measure the wealth of people, then we can observe the annual income of citizens within a country or across different countries. If we make observations of wealth within a country, then we can see how wealth changes across parts of a country (changing values across space) and how this wealth changes from year to year (changing values across time). We can also measure the wealth of countries. The variable will change from country to country (changing values across space) and from year to year (changing values across time).

In order to meet the requirements of the scientific method, we need to word the hypothesis in a way that makes it testable. This means that the concepts need to be observable. It may take the form of a cause-effect statement, "if x, then y." The cause, x, is called the **independent variable**. It is a factor that causes the phenomenon. The effect, y, is called the **dependent variable**. It is a phenomenon that is being caused. If a theory is too complex to test in one setting, a researcher can test a part of the theory using a hypothesis derived from it. As researchers test more parts of the theory, they contribute to the accumulation of knowledge.

Getting back to our free trade research example, we can summarize an answer to the question (why do some countries sign free trade agreements while others do not?) in a simple and clear hypothesis: Having large business associations in a country increases the chance that politicians will sign free trade agreements. Our independent variable is the existence of large business associations in a country. The dependent variable is likelihood of signing a free trade agreement.

Next, we need to gather evidence to test the hypothesis. This step can be tricky because we can introduce bias if we are not careful. Biased data are information that favors supporting our hypothesis. It is tempting to seek out evidence that will support our hypothesis and ignore any evidence that may contradict it. We often see examples of biased analysis on TV, the internet, and other media outlets. Such analysts have a conclusion that they badly want to "prove" and therefore leave out evidence that could harm their arguments. However, the scientific method requires an objective analysis. We need to gather evidence without considering whether or not the evidence will support our claims. For example, we could search only for cases that uphold our claim that countries with large business associations tend to sign free trade agreements than countries without such associations. In other words, we could choose only those cases that fit our claim. However, this would be a bias in favor of our claim and thus is not a real test. Instead, we would need to examine a representative sample of all countries regardless of whether they signed free trade agreements or whether they have large business associations, and then see what proportion of them fit our claim.

Now that the evidence is in front of us, we can compare the results with the expectations. Perhaps we will discover that 30 percent of the agreements demonstrate that the political leaders were convinced to sign the agreement by large business associations. Or maybe 50 percent follow our expected pattern, or maybe 80 percent do.

So how can we conclude whether we have evidence to support our claim? A researcher can come up with one of three possible conclusions. First, the researcher may discover that the evidence is contrary to the expectation. If we find that only 30 percent of the free trade agreements fit our claim, we can conclude that the percentage is too low and therefore we lack strong enough evidence. We say that the data falsified the claim, meaning that the researcher will reject the hypothesis.

Second, the researcher may discover that there is not enough evidence to support or falsify the claim. For example, if the researcher discovers that 50 percent of the cases followed the expected pattern, then the evidence is not sufficiently strong to conclude that the hypothesis is correct. In this case, the researcher may say that that evidence is inconclusive. In other words, the researcher does not know if the claim is accurate or not. In such circumstances, scientists usually side with caution and reject the hypothesis as well. However, this time it is because we simply do not know if we are correct or not.

The last possible conclusion would be that the evidence supports the claim. Let's say the researcher determines that if they find that 80 percent of the cases fit the expected pattern, the evidence is strong enough to support the claim. How can we conclude if we have support with 80 percent of the cases? Do we not need 100 percent? Not necessarily, and here is why. Humans are very complex beings, and as a result, no one claim is likely to explain 100 percent of human-related activity. Think about all the reasons you are reading this chapter. Is there one and only one reason you are reading this chapter? Therefore, any claim a researcher makes will only be part of the story. Perhaps the claim is a large part of the story, but it will not likely be the entire story. However, if the researcher can make a claim that explains a large portion of the story, then we have something important to say. In such circumstances, the researcher can accept the hypothesis because there is enough evidence. We can have a good degree of confidence that the claim is correct.

The last step involves writing up the analysis and getting it evaluated. The write-up needs to communicate all the previous steps so that there is transparency in how the research was conducted and tests were performed. It must communicate all the steps that the researcher followed. The researcher must tell the readers why the research question is important and how it fits with what we already know. The reasoning behind the claim must be logical and understandable. The researcher must discuss the evidence and be able to demonstrate that no bias is present. Finally, the researcher needs to defend the appropriate conclusions using the evidence. If other researchers agree that the study is valid, then it is published in a peer-reviewed journal or book, where it becomes part of the larger literature on the topic and the findings will make their way into someone else's future study.

## MORE ON THEORIES AND HYPOTHESES IN POLITICAL SCIENCE

### LEARNING OBJECTIVE

**2.3** Understand how theories and hypotheses are developed in political research.

Theories and hypotheses of scientific research require a little more detail so that we can keep certain factors in mind when using them in political research. First, we look at why theories rely on assumptions. We will see that assumptions are important if they are reasonable. We then examine how much any one theory can explain and why political science has so many theories. While having a single grand theory to explain all political phenomena sounds like a great idea, formulating one has proven to be very difficult. Next, we try to understand the differences between causal hypotheses and ones that describe an association between our independent and dependent variables. We conclude that without true experimental conditions, it is difficult to demonstrate a causal relationship. We end this section by providing some thoughts on political science's ability to predict outcomes.

### The Role of Assumptions in Theory Building

First, theories are built on assumptions. Theoretical assumptions are our starting points—they are items that we hold as true when we begin our explanation. Some researchers state theoretical assumptions clearly, while others do not. Some stated assumptions require more explanation so that the reader will accept them. For example, perhaps a theory assumes that a person's upbringing plays no role in making a political decision. Only current factors, like the person's material wealth, are important. By assuming that a person's upbringing plays no role, we do not imply that the way people are raised does not matter at all in their political choices. Rather, it means that there are other factors (in this example, current conditions) that are much more important in explaining political decision-making.

Why make theoretical assumptions? As mentioned earlier, humans are complex beings, as are their behaviors. Many factors can contribute to our behavior. As a result, we need to simplify our complex world with certain assumptions. Simplification does not necessarily harm our ability to explain political phenomena. Simplification allows us to narrow down the list of factors that are most important in explaining a particular political phenomenon. Many political scientists strive to develop a **parsimonious theory**—a theory that can explain a phenomenon with a few factors. In general, if the two theories can explain the same set of phenomena, then the more parsimonious theory is preferred.

What if theoretical assumptions are wrong? First, if assumptions are completely incorrect, theoretical predictions about human behavior and society are likely to be wrong as well. Therefore, when you follow the scientific method and test a hypothesis derived from the theory with data, you will probably find disconfirming evidence. This gives you an opportunity to reevaluate the theory, including its assumptions. If the assumptions are inaccurate and they lead to incorrect predictions, you need to revise the assumptions. What if the assumptions are not accurate but they still help the theory to generate predictions that approximate reality?

The “utility maximizer” assumption of the rational choice theory is one such example. Many political science theories begin by assuming that people are rational and make decisions by examining how they can maximize benefits and minimize costs. People will therefore gather information they need to make decisions, compare all the different options, and choose a strategy that leads to an outcome that most benefits them. Some scholars have challenged the assumption when stating that humans lack cognitive capabilities to be utility maximizers.



They disagree with this utility maximization assumption of rational choice theory because they observe that people may not seek, or may not be able to seek, all the information needed to make a decision that will maximize their benefits. In addition, some nonmaterial benefits are hard to compare with material ones. For example, how can we compare the utility of a “good feeling” one has when making a decision with a monetary payoff of a different decision? Which has more value? It is therefore difficult to observe what exactly a benefit entails. Does this mean we should dismiss the rationality assumption?

Nobel Laureate in Economic Sciences Milton Friedman argued in his 1953 essay, “The Methodology of Positive Economics,” that theories should be judged not by their psychological realism but by their ability to predict behavior. Even though we know that humans do not behave in a perfectly rational manner, we still try to be rational, and the utility maximization model is a close approximation of human behavior. Friedman’s view was that, as long as a theory is useful, its assumptions need not be perfect.

### Is a Grand Theory of Political Science Possible?

Another item to keep in mind is the range of questions political science theories can answer. It would be great if we have a grand theory of politics. We could use such a theory to explain all political phenomena. A single grand theory could explain, for example, both the results of a local mayor’s election and why countries fight wars. However, as you will see in this book, no such grand theory exists. Efforts to create such a paradigm in political science were not successful. Instead, political science has middle-range theories. These theories only attempt to explain a set of similar political phenomena. We have theories, for example, that attempt to explain the occurrence of war. Notice that we used the plural word *theories*, and not *a theory*, of why wars among countries exist. Even within a subset of research questions, no one theory dominates. Instead, we have multiple theories that rely on differing assumptions and logical mechanisms to explain war across time and around the world. The same applies to other political events such as why some countries are democratic, why some societies continue to have low levels of economic development, or why some citizens trust their governments more than other citizens do.

#### EXPAND YOUR THOUGHTS POLITICAL SCIENCE LAWS?

Some political scientists argue that we should strive to build law-like theories that are more common in natural sciences. Some do not consider finding laws of political science likely and instead advocate that we should develop theories that are more probabilistic—those that do not predict or explain with 100 percent or near 100 percent accuracy but do so with good probabilities, say 80 percent. Yet others are skeptical of political science ever being able to develop predictive theories. What is your position?

Let’s examine one theory a bit more closely. Modernization theory explains why stable democracy develops in certain countries and not in others. Modernization theory emphasizes

the role of economic development in accounting for democratic development. Factors such as higher per capita income, industrialization, and urbanization will lead to the growth of the middle class. The middle-class people are educated and capable. They would thus demand political power. Once this group becomes large enough in the society, according to modernization theory, the country becomes and stays democratic. You can see that modernization theory contains parts—propositions and concepts—that are interrelated and that together explain democratization and stability of democracy. The theory also assumes that people prefer to control political power than to be controlled by others. Education and economic wealth give them the tools to achieve this power. Another attribute of a theory is that it is general; that is, it is not an explanation for just one or a few cases but is an explanation that accounts for a large number of cases. Indeed, many political scientists regard a theory that can explain more cases as a more preferred theory.

### Causation Versus Association

Another point that requires more detail is the difference between causation and association. In political science, is it possible to verify that  $x$  (the independent variable) causes  $y$  (the dependent variable)? Or do we just happen to observe  $x$  and  $y$  to occur together? These questions are at the heart of the “causation versus association” problem. Often times, theories are worded so that they are explaining a causal relationship. This would require us to test to see if a causal relationship is really happening. However, many studies do not employ this level of testing. Instead, they often demonstrate that  $x$  and  $y$  are observed in the way the theory predicts. Since the theory gives a reasonable explanation, we conclude that  $x$  caused  $y$ . This poses a challenge in empirical testing because it is possible that  $x$  did not cause  $y$ .  $X$  and  $y$  could appear together by coincidence, or perhaps something else produces  $x$  and  $y$ . We call this type of false association that appears to be causal but in fact is not a spurious relationship. As you can see, simply observing  $x$  and  $y$  happening together may lead to some false conclusions.

How do we resolve this problem? Ideally, we would run controlled experiments like researchers do in laboratories. You may have done some simple experiments in your school life. For example, consider a plant experiment. You have three plants. Each plant is the same, with the same soil and amount of water. The hypothesis we want to test is if sunlight causes the plant to grow. Since the plants, soil, and water are the same (they are all constants), we can vary the amount of sunlight to see if, in fact, it helps the plants to grow. We keep one in dark, another with little sunlight, and third with a good amount of sunlight. After measuring the plants over time, we discover that the plant with the most sunlight grew more than the other two. We have demonstrated causation by controlling the plants’ exposure to the sunlight while holding other factors constant: The sunlight caused the plant to grow.

The plant experiment will not win us a Nobel Prize, but it does show that controlled experiments can demonstrate causality. Do we have such experiments in political science? The brief answer is, generally speaking, no. While there has been some experimentation in certain areas of political science, such as studies that involve psychologically based theories, most of the findings rely on statistical operations that mimic experimentation conditions but are not exactly experiments.

Why is experimentation not common in political science research? Well, in many cases we are ethically and practically limited. Take any hypothesis regarding the causes of war. Would it be ethical, or even possible, to manipulate a set of countries to see if they will wage wars against each other? In another example, is it ethical to lie intentionally to voters to see if we can change their decisions on a candidate and find the causes behind voter choice? Would it even be possible for researchers to manipulate levels of countries' economic development so that they can test if democracy does not break down beyond a certain level of economic development? Instead of experiments, many political scientists examine the natural laboratory as events occur in the mostly uncontrolled world. They seek to approximate controlled experiment through quasi-experimental research design using statistical techniques or by case matching. They gather data as events unfold or look at the historical record for sound case comparisons. From these studies, we approximate a causal finding.

Political science is not alone in dealing with the “causation versus association” problem. A few natural sciences also face the same dilemma. Seismologists (people who study earthquakes) cannot create an earthquake to see if their hypotheses can predict when they will occur. It would be great if we knew when an earthquake would hit a heavily populated area. However, the ability to create a real one in the earth is impossible for many reasons. Seismologists instead rely on data gathered when earthquakes do occur to see if their hypotheses are correct. After gathering enough data in the natural world, these researchers can piece together a highly predictive theory. Political scientists work in a similar manner.

### PRACTICAL APPLICATION

#### A HYPOTHESIS THAT IS IMPORTANT TO YOU

Political science research often begins with important questions in our lives. A hypothesis is a simple statement that describes a relationship between variables. Think about something related to real-world politics about which you care. State your hypothesis in a clear and concise manner regarding why you believe such a phenomenon happens. Which one is the independent variable (or the factor that causes the phenomenon), and which one is the dependent variable (or the phenomenon to be explained)? What is your explanation as to why the dependent variable occurs as a result of the independent variable?

### Predictions in Political Science

If theories are useful in answering important questions, then they may also help us predict how events will unfold. With the ability to predict outcomes, political scientists can suggest policies that will promote benefits for a society or prevent undesirable outcomes from happening.

In the previous section, we learned that modernization theory consists of various concepts and propositions, which makes it difficult for us to test the entire theory at once. One frequently tested hypothesis derived from modernization theory is that per capita income and the likelihood that a country is democratic is positively correlated. In other words, the higher per capita income, the more likely that the country is a democracy. Per capita income is the

independent variable and the likelihood that a country is democratic is the dependent variable. Many researchers have found that per capita income and the likelihood that a country is democratic are indeed positively correlated. If modernization theory is a good scientific theory, that is, if the theory has withstood repeated tests with consistent evidence supporting the theoretical claims, we should be able to use modernization theory to predict if and at what level of wealth a country will become a democracy.

Recall that most political science theories are probabilistic. They do not explain political phenomena 100 percent of the time. Instead, good political science theories should explain political phenomena reasonably well. That means that while researching, you may encounter observations that are not consistent with theoretical predictions. For example, the People's Republic of China is not a democracy, yet its economy is growing (in other words, people are becoming wealthier). Does this imply that China's chances of becoming a democracy are increasing? According to past findings of modernization theory, we could expect this to be the case. However, no single theory, especially one regarding human activity, will explain all events. The complexity of human behavior requires us to have multiple theories and hypotheses to approximate events found in our world. If China does become a democracy because of economic development, then we have one more data point supporting modernization theory. If China stays autocratic despite its economic development, that does not necessarily negate the explanatory power of modernization theory. Yet we need to suspect that perhaps another factor or other factors are at work that prevents China from democratizing.

## DISCOVERY IN POLITICAL SCIENCE

### LEARNING OBJECTIVE

- 2.4** Understand the roles that intuition and evidence perform in political science inquiry.

This book contains many findings that may sound intuitive to you. This means that you “feel” or have a “hunch” that the findings are true because they make logical sense. Therefore, you may think that seeking evidence to support claims is not necessary. You may believe that people are wasting their time since the claim is “obviously” true. The problem is: How do we know if a claim is true unless we find evidence to support it?

We need to recognize that intuition is an important part of the scientific process because it offers us a good starting point. Our minds come up with ideas that seem reasonable given what we already know. After all, scientists generally do not go out to see if there is evidence for relationships that they believe are incorrect. They seek observations based on what they believe to be true. It is intriguing, however, when we discover evidence that contradicts our intuitive starting point.



Take, for example, the start of a **social movement** or revolution. A social movement occurs when citizens of a country organize in a sustained manner to seek some sort of change in the politics of a society. Members of a social movement use protest, public meetings, and rallies (often peaceful, but not always) as well as various forms of civil disobedience to get the message for change in the ears of governmental leaders. Social movements are prevalent in democracies, but sometimes occur in nondemocracies. The Civil Rights movement in the United States is an example of citizens demanding the improvement of political rights for Black Americans as part of the overall fight to end racism.

In contrast, a **revolution** aims to produce a complete change. A revolution is a complete overhaul of a political system often through a violent overthrow of the previous political regime. Citizens are so unhappy with their political, social, and economic conditions that they demand an entire change in the political system. Revolutions are mostly violent affairs with citizens taking up arms against their current government. They demand the removal of the incumbent political leaders to install a new social, economic, or political system. The French Revolution is an example of people wanting to remove a monarchy and establish a democratic form of government.

We may think that social movements or revolutions are spontaneous protests of people gathered to change undesirable circumstances. We picture people participating in civil disobedience or marching with others to show dissatisfaction. In the case of revolutions, we may picture people organizing themselves into military units to fight the current regime. The reality, however, is far from this. People generally do not spontaneously organize themselves for change. Instead, certain individuals acting as leaders organize and inspire people into action against the political system. These leaders communicate the legitimacy behind people's dissatisfaction and explain why it is in their best interest to organize, protest, and, sometimes, conduct armed rebellion.

The claim that people will act against an unsatisfactory political condition sounds intuitive. Nonetheless, the evidence shows us that this will not be the case unless a robust leadership is present. In fact, current and past events show that it is common to have many dissatisfied people, but most of the time they do nothing to change their political systems. The finding that most dissatisfied people do nothing to change their systems opens up another avenue of questions: Why do people fail to act if they are unhappy? Who becomes leaders of contentious politics, such as protests and revolutions? Why are some political leaders unable to communicate the legitimacy behind people's dissatisfaction? Why do people sometimes choose democratic means (such as elections) to make changes while in other times they resort to violence?

In our brief example, we described a discovery that may challenge our intuition. We may believe, intuitively, that dramatic changes brought about by social movements or revolutions are due to people being very dissatisfied by their circumstances. Instead of people spontaneously getting together because they are "fed up" by the current political system, evidence points to people doing the opposite. The discovery that dramatic change requires more than simply being dissatisfied requires us to ask and answer even more questions on this topic, which will lead to us to other avenues of discovery.

## GETTING RESEARCH RIGHT: BIAS AND PREDICTION IN THE STUDY OF POLITICS

### LEARNING OBJECTIVE

- 2.5** Recognize intended and unintended biases in research and their consequences for our understanding of politics.

We may perform a scientific study of politics inappropriately if we are not careful. If we scientifically study other creatures or organisms, we can easily distance ourselves from the subject. In studying politics, we are studying ourselves, which may cause us not to be as objective as we should. In addition, political scientists often cannot conduct laboratory experiments. Since we are unable to control for many factors like in a laboratory, we may believe that one variable is related to another when in fact it is not. Poor research design and the lack of objectivity can lead to biased conclusions. To be sure that we are on the correct track, we need to consider all the biases that may present in a study.

Bias is an inclination or prejudice in favor of or against a particular thing, view, person, or group compared with another in an unfair way. Bias is not uncommon in political claims. In this chapter, we have emphasized the important role that the scientific method plays in testing hypotheses. Although the scientific method provides a way for us to test the empirical validity of various ideas and claims, researchers need to take necessary care if their research is to serve as a valid test. One of the sources of bias is one's values. While there is a debate about whether value-neutral research is even possible in political science, the scientific study of politics requires one not to allow one's values and desires to interfere in the research process. Such interference may lead to biased collection of information just to validate one's claim—that is, only gather data that fit the story and ignore other data that contradict, or otherwise may cause distortion in, the interpretation of the data.

Bias in research can also arise even without researchers' intent due to poor procedures for collecting data or data unavailability. For example, many studies have shown that democracies tend to do a better job than dictatorships in promoting citizens' well-being, especially in prolonging life expectancy and reducing child deaths. However, Michael Ross (2006) points out that one of the reasons why democracies *appear* to perform better than dictatorships in earlier studies is that data on many nondemocratic countries that tended to perform well were not available. Therefore, many studies predominantly included dictatorships that did poorly while omitting many that did well. Although to what extent democracies are better at promoting citizens' well-being compared to dictatorships remains a subject of intense debate, Ross made an important and valid criticism in this literature. If investigators do not follow proper procedure in making sure that the sample of individuals that they decided to study closely mirrors the population they are trying to understand, they can make costly mistakes.

## Case Study: Biases in Predicting the 1936 U.S. Presidential Election

One such mistake from the use of a biased sample occurred in the United States in the 1930s. In 1936, U.S. President Franklin Roosevelt, a Democrat, was seeking reelection against Republican candidate Alf Landon. The *Literary Digest* was one of the most respected magazines of the time and had correctly predicted the winner of the presidential election since 1916. In 1936, the *Digest* conducted perhaps the largest poll ever taken in the history of electoral politics. The *Digest* mailed over 10 million questionnaires to its subscribers and names drawn from lists of automobile and telephone owners, and over 2.4 million people responded. Based on the responses obtained from this sample, the *Digest* predicted a landslide victory by Landon, by 57 to 43 percent. The election indeed produced a landslide: Roosevelt won with 62 percent of the vote. And the *Digest* went out of business.

What went wrong? The *Digest*'s polling techniques were the main culprit. By its polling method, it polled people who were much wealthier than most, and wealthy people tended to support the Republican candidate. Just think about who would be able to afford to subscribe a magazine like the *Digest* during the Great Depression or own telephones and cars at that time? Although unintended, the magazine polled a biased sample of voters, which ended up causing the embarrassing failure in prediction.

This example shows you the importance of obtaining data appropriately if you are to make a general conclusion from them. It also cautions us against making generalizations based solely on our experience or the experiences of a few people with whom we associate. When we do that, there is a significant chance that our sample will be biased, that is, not representative of the larger population. When you draw conclusions based on a study using a biased sample, the likelihood that your conclusions are wrong significantly increases.

## Science Gone Wrong: The Case of the Eugenics Movement

It is important to spotlight the times in recent history when researchers and political leaders incorrectly used the scientific method and thereby produced tragic consequences. The following discussion of the eugenics movement demonstrates how biased studies produced invalid findings that influenced U.S. laws and court rulings.

Eugenics is a belief that people biologically inherit socially desirable human traits, such as intelligence and proper behavior. Eugenicists believe that they can improve the human condition by limiting the reproductive ability of, or otherwise excluding, people and groups judged to be inferior, while promoting the procreation of those who they judge to be superior. Advocates referred to the practice as “race hygiene.”

The ideas of eugenics have a long history. Plato, an ancient Greek philosopher, in his book *The Republic*, suggested that the ideal society should apply principles of selective human breeding. In modern times, the eugenics movement began in the late nineteenth century and had popular appeal until the 1940s in the United States and Europe. Even after its decline in popularity, we still see its lingering effects. Charles Darwin's half-cousin Francis Galton introduced eugenics and its related concepts in 1883. You may know Darwin as the founder of the theory

of evolution. Galton and others took the ideas from this theory and extended them into the pseudoscience of eugenics.

What is wrong with the science behind eugenics? First, the traits that eugenicists declared to be socially desirable are subjective. What does it mean to be intelligent? How does one objectively measure such a trait? Numerous studies have pointed to the biases associated with defining and measuring intelligence. In addition, it is very difficult to remove the social conditions that contribute to someone's intellectual development. For example, we know that wealth is a major contributor to a person's ability to get a good education. Other social conditions, such as racism and sexism also produce barriers. Finally, members of the eugenics movement believed that one's physical appearance was an indicator for undesirable human traits. For example, they believed that an individual's skull shape or nose size was a good indicator for intelligence or even the likelihood that the person was capable of criminal activity. By using physical appearance as an indicator, proponents could target members of specific ethnic groups as being undesirable.

In the United States, the popularity of eugenics was behind several political decisions in the early twentieth century. Numerous states passed laws permitting the sterilization of individuals who specialists deemed unfit to have children. Doctors would carry out the procedures without a person's consent or knowledge. State and lower federal courts subsequently struck down some of these laws. However, in their ruling in *Buck v. Bell* (1927), the Supreme Court declared, by an 8-to-1 decision, that laws permitting forced sterilization were constitutional. Also during the same period, the U.S. government passed the Immigration Act of 1924. The act's immigration laws introduced quotas on individuals that could immigrate to the United States based on the 1890 census data. Using the 1890 data was intentional. During this time, most immigrants came from northwest Europe (Britain, Germany, Scandinavia, etc.). Advocates of the new immigration laws viewed people from these countries as having socially desirable traits. The laws attempted to exclude the rising number of individuals from East Asia (mainly China and Japan) and southern and eastern Europe (Italy, Spain, Portugal, Poland, Russia, etc.) because they believed these people held socially undesirable traits. One of the major religious considerations was limiting the number of Jews coming from eastern Europe.

The eugenics movement hit its highpoint in 1932 when the Nazis seized power in Germany. Their fascist ideology (Nazism, which we will discuss in greater depth in the next chapter) led them to enact a series of "racial purity" laws. Such laws removed the citizenship of Jews and other "undesirable" Germans, robbing them of their property. The Nazi's thinking eventually led to the murder of millions of people in numerous death camps in Germany and eastern Europe. After the Nazis conquered eastern Europe, their murderous policies extended to Poles and Russians because they deemed the Slavic peoples as inferior. The defeat of Germany in World War II ended the Nazi atrocities and the open use of eugenic beliefs in the creation of laws and other policies. Interestingly, Nazi leaders that were on trial for crimes against humanity cited the U.S. Supreme Court case *Buck v. Bell* as a partial justification for their actions.

In sum, sound scientific reasoning was not the basis of the so-called biology-based political decisions that led to numerous tragedies. Instead, they were actually propagating the socially constructed discrimination already in place. Eugenicists had already viewed certain people as inferior and simply used "science" to justify their beliefs. It is therefore not a surprise that today the term *eugenics* is closely associated with the concepts of scientific racism and white supremacy.



## PRACTICAL APPLICATION

### THE BIASES OF “I JUST KNOW IT’S TRUE”

We discussed that bias is an inclination or prejudice in favor of or against a particular thing, view, person, or group compared with another in an unfair way. One of the sources of bias is one’s values. You may have been involved in a discussion when someone’s facts are questioned, only to hear the challenged person say, “I just know it’s true!”

Although the scientific method provides a way for us to test the empirical validity of various ideas and claims, researchers need to take necessary care if their research is to serve as a valid test. Firmly believing that something is true when it is not may cause problems in the analysis of politics. How would you deal with the “I just know it’s true” attitude when faced with it?

## NORMATIVE STUDY OF POLITICS

### LEARNING OBJECTIVE

**2.6** Describe the role of normative theory in political science.

Although the use of the scientific method is common in today’s political science research, not all scholars in the discipline apply the scientific method. This branch of the discipline is referred to as political theory. Many such scholars employ **normative theory**, which concerns the evaluative judgments about what is right or wrong, just or unjust, or desirable or undesirable in a society. It is not a part of the scientific branch of political science, and it makes no claims to follow the scientific method. Instead, its primary role is to evaluate phenomena and offer alternatives on how the world “ought to” or “should” be. The focus is on prescribing changes that would form an ideal world. It does not seek to explain politics in the scientific sense but attempts to explain why things are undesirable based on specific value judgments.

The values espoused in normative theory are subjective since they are based on a scholar’s moral views. Perhaps the scholar will argue that society should be set up to benefit the greater good by focusing on society as a collective unit. Other scholars will conversely argue that only through individual self-reliance will we achieve the greater good for society. Yet others will argue that the greater good for society is unachievable and/or perhaps unworthy of pursuit.

There is debate among political scientists regarding the role of normative theory. Some argue that it plays a critical role in our understanding of the human condition. Others are skeptical about the role of political normative theory in contemporary political science due to how the discipline has developed. We, the authors of this book, consider normative theory as an important part of the study of politics. As you will see in the next chapter, normative political theory is frequently the basis of ideology that motivates political action. In the end, the relationship between the government and the governed is a perpetual question for many of us who study politics. We conjecture how the world ought to be and seek improvement in the way we live and relate to one another.

The role of ideology is also interesting and can be studied scientifically as well as normatively. Why do some ideologies evolve and have lasting appeal while others do not? What explains the attractiveness of an ideology? Why do some people adopt a specific ideology while most people do not? The next chapter will start us down the road of discovery by examining some of the more popular ideologies of our times as well as major classical ideologies that have had significant impact on the way we interpret the world.

## SUMMARY

Political science is the scientific study of politics. This chapter introduced you to a specific way of analyzing political phenomena using the scientific method of discovery. The scientific method allows us to make reliable evidence-based claims by requiring our evidence to be objectively collected and therefore free of biases. The first steps of analysis involve asking important questions and using theories to provide preliminary answers. Theories help us develop hypotheses that need testing using real-world observations. Conclusions drawn from the evidence promote reaffirmation or discovery, which may sometimes be counterintuitive. In fact, many of the more exciting discoveries are not what we expect.

Biases in research could be intentional or unintentional. Researchers need to remove their own values as much as possible from the research process if they are to understand how the world works. It is also imperative for researchers to pay adequate attention to how the observations they use in research are collected and analyzed so as not to introduce unintended biases to their research.

Although much of political science today relies on empirical testing, some scholars do explore problems facing society using normative theories. Normative theories are an important part of the study of politics because of the fundamental questions they address and the insights they offer in guiding human behavior. In the next chapter on ideologies, we will examine normative ideas and examine how people use them in political life.

## KEY TERMS

Dependent variable (p. 23)  
 Free trade agreement (p. 22)  
 Hypothesis (p. 22)  
 Independent variable (p. 23)  
 Normative theory (p. 34)  
 Parsimonious theory (p. 25)  
 Political science (p. 19)

Revolution (p. 30)  
 Scientific method (p. 21)  
 Scientific theory (p. 22)  
 Social movement (p. 30)  
 Social science (p. 19)  
 Theory (p. 22)  
 Variable (p. 22)