



Political scientists utilize a wide variety of methods to understand political events.

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## 2

## RESEARCH METHODS

## CHAPTER OBJECTIVES

1. Describe basic research concepts, including hypothesis, causality, and variables.
2. Define *quantitative methods* and the costs and benefits of their use.
3. Define *qualitative methods* and the costs and benefits of their use.
4. Delineate the importance of research methods in the study of political science.

If you're new or relatively new to college, you've surely experienced the dreaded standardized test in high school. In many states, students must pass a rigorous set of examinations in order to be promoted from grade to grade or even to graduate. One of the significant criticisms of such an approach is either that teachers end up teaching to the test and neglect other important topics and skills that should be taught in the classroom or that the tests themselves don't adequately measure how much a student has learned or what kinds of capabilities students already possess. But in lieu of detailed observations and analyses of individual students and their knowledge, performance, and skills, what else do educators have to measure and assess student performance? In other words, what's more important in understanding student progress: The grade you receive on a test or an overall qualitative assessment done by those who know you best? Even if the best answer is a combination of both the test score and detailed observation of your knowledge and classroom performance, where will the resources come from for those observations? In an educational system that is already hard pressed for money and teachers, there is no ability to collect such data.

Similar questions plague political science research. How do we best grasp the information that already exists in the world: through numbers or through words? What is a better indicator of what's happening in the world that we want to analyze: words, actions, or numbers? This chapter introduces two of the key ways in which political scientists attempt to answer major research questions. To do so, however, requires a bit of explanation of the research process, which is what this chapter begins with. First, it details the process of moving from questions and answers to preparing to test your hypotheses. Afterward, it introduces both quantitative and qualitative methods while giving some examples of the different procedures that each uses. After comparing the two approaches, the chapter discusses why there is a debate in political science over the two methodological approaches and suggests some ways of, if not settling the question, how you might choose between the two.

A key caveat is in order before we begin. Some political scientists will argue that research methodology comprises an entirely different subfield of political science in the way American politics or international relations are. This chapter does not purport to cover in detail every aspect of this debate or every detail of research methods; that task is best left to the multitude of books and classes on research methods. The aim in this chapter is merely to introduce some of the major ways political scientists undertake their research.

## QUESTIONS AND ANSWERS

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Most of this book will focus on familiarizing you with the state of political science research today, but perhaps you would also like to ask questions that you can find answers to about politics. This is what the research process is for. In brief, political scientists tend to follow the scientific method of asking questions, forming hypotheses, defining tests, examining the evidence, and making conclusions. The first two steps, in particular, are crucial to the question of what methods you can use or should use.

### Framing Questions and Hypotheses

All good research begins with a good question. By a good question, we usually mean something that is not amorphous or nonspecific but something that narrows down the topic you're looking at and specifies precisely the area that you're interested in. Let's take a few examples:

Why does Russia behave the way it does?

What influences immigration policy?

Why can't Congress get anything done?

What do you think is wrong with these questions? The one thing they all have in common is that they are not nearly specific enough: What Russian behavior are we talking about and toward whom? Are you talking about immigration policy in the United States or elsewhere? What tasks specifically should Congress be doing that they aren't? Research questions need to be far more specific or you're likely to end up on a wild-goose chase looking for potential answers. Here's how those three questions could possibly be narrowed down:

What motivations does Russia have in invading Ukraine?

What influences immigration policy in America in the twenty-first century?

Why has there been a downturn in the frequency of laws passed in the US Congress?

These questions are far more detailed and point us in a more particular direction.

Once you've developed an appropriate research question, the next step is to come up with a **hypothesis**—a reasonable guess as to what the answer might be to your question. You should base your hypothesis on what you may already know or suspect about the topic, and the hypothesis should be specific as well. The following might serve as potential hypotheses to the previous research question:

Russia was motivated to invade Ukraine because of a fear of European meddling in supposedly Russian affairs.

Immigration policy in America is influenced by economic and political factors.

Congress has passed fewer laws because party polarization has increased.

In all of these cases, the hypotheses direct your research in a particular way. Without questions and hypotheses, your research is likely to lack focus.

Once you have identified a question and hypothesis, the next step is to start researching! But don't skip to analyzing data just yet; most political science research starts with what scholars call a **literature review**. Quite literally, it is a summary and analysis of the research that has been done previously on your topic. It's important to include this because what people have already discovered can help you rule out and rule in potential variables in the relationship you are examining. The research of others can also help support your hypothesis; if other people are finding the same thing that you do, it makes your conclusions that much stronger. Don't worry if you still don't quite understand these early steps. It often takes practice and guidance to come to good questions and answers. Most colleges and universities offer specialized classes in research methods where these topics are covered, and you can work on making your questions specific and answerable.

## Variables and Concepts

At this point in the process, you'll be preparing to perform your own independent research to attempt to answer your research question, and this is where the issue of methods come into play. Physicists or biologists in labs have this part relatively easy; they can perform experiments in petri dishes and controlled areas. This is the ideal method in which to answer research questions. All conditions can be controlled, and you can look through a microscope or even a telescope to understand exactly what is happening and why. Political scientists and other social scientists aren't so lucky; we must deal with the messiness and uncontrollability that we call life. Political scientists can't control peoples' actions or the conditions that might influence them; plus, it would be very hard to manipulate something like Russian policy or congressional action just to try and prove your hypothesis. Because of this, scholars must turn to nonexperimental methods to test our questions.

When we break our hypothesis down to its very basics, the hypothesis usually says that A causes B or A, B, and C cause D. Those letters, those causes and effects, are **variables**, they are ideas or concepts that can vary over time. When talking about research, there are two general types of variables, independent and dependent. **Independent variables** are your suspected causes while **dependent variables** are the effect. At the end of the day, our research is trying to show what independent variables cause the dependent variables.

Variables are discrete categories of data: number of Democrats or Republicans, number of presidential statements, type of ruling handed down. And while our research questions sometimes naturally suggest which variables to use, more often than not, our hypotheses give us concepts that we then have to define. For example, if the hypothesis is that presidential power increases when congressional power decreases, the two variables are presidential power and congressional power. But what is power? What *is* it? How do we know what it is? Defining what we mean by these concepts is what political scientists call **conceptualization**. Once we have a working definition, we can then turn our concepts into variables, a process called **operationalization**. Operationalization looks at the definition of the concept and says this is

how we will measure the concept. Through these steps we go from general ideas to concepts to variables that we can study. No matter the methods we use to study our hypotheses, we almost always use this same process to identify clearly and specifically what we are studying and what we are expecting to find.

Let's work through an example using the earlier immigration policy hypothesis. What do we mean by "immigration policy"? The first step is conceptualizing or defining the concept. For our purposes, we may take immigration policy to mean the overriding paradigm or policy aim that the US federal government has adopted in regard to both legal and illegal immigration. Note that the conceptualization includes both illegal and legal immigration; this is important because depending on how another researcher may conceptualize immigration policy, they may or may not include both. This demonstrates just how important conceptualization can be to the research process—researchers may come to different conclusions on the same topic simply because they disagree on the meaning of a concept.

Once we have defined our concept, the next step is operationalization, taking the definition and turning it into a working variable. The result of this stage may vary slightly depending on the methodology you utilize (discussed in the next section). If you use qualitative methods, you may argue that presidential policy statements would be an indicator as to the direction of immigration policy in the United States. But what if you are using quantitative methods? How can you turn "immigration policy" into a numerical value? Depending on the researcher, you may go through immigration law and presidential statements to identify whether immigration policy is more or less stringent, perhaps on a scale of one to ten. Or maybe you can count the number of immigration regulations present in each year. Often, there is no tried, true, and correct way of operationalizing a variable, but the researcher must be able to justify why that particular operationalization is being chosen over another. This is another key role that literature reviews can serve in informing you as to what other scholars have chosen as their conceptualizations and operationalizations.

Once you have identified your concepts and turned them into workable variables, you can turn to testing whether your hypothesis is correct or not, and this is where the choice of methods becomes significant.

## QUANTITATIVE METHODS

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As should be obvious by now, the word *quantitative* invokes the use of numbers, math, and statistics in working to answer a given research question. As a broad topic, there are many ways in which numbers can be used or in which words or concepts can be turned into numbers or quantified. You can count the frequency of particular actions like executive orders or legislative hearings. You can track those data over time to see if there are any patterns. And then, you can get data on multiple items to decode whether there is a correlation, or relationship, between two variables. In other words, **quantitative methods** can be used to describe patterns or understand statistical relationships between concepts and/or variables.

## Types of Variables

In turning to statistical methods, political scientists use these to approximate to the best of our ability an experiment. We attempt to show that an independent variable happens to coincide with a dependent variable or that multiple different independent variables influence whether the dependent variable goes up or down. To do so, political scientists use a variety of different data types, including nominal, ordinal, and interval. These labels signify the type of data that are being used and help determine which statistical tests are appropriate to measure relationships between and among variables.

**Nominal variables** are variables for which different qualitative labels are possible, for example, gender. If you are gathering data on an individual's gender, for instance, the options may include male, female, or nonbinary. Questions that offer yes or no answers are also nominal variables. **Ordinal variables** are similar to nominal variables in that the data is measured via categories, but in this case, the categories have an inherent order to them. If you ask someone whether they strongly dislike, dislike, like, or strongly like a particular policy option, these categories have a particular order to them that makes sense—if you were to provide the options as like, strongly dislike, strongly like, and dislike, the ordering would not make sense. Compare this example to gender above, where the options would make sense no matter the order they are placed in. Finally, **interval variables** are those data types that can be measured with a number, for example, someone's specific age or annual income. To be sure, data can be measured in a variety of ways—consider age for a moment. If you measure someone's age with a specific number, the variable is interval. However, if you instead use age ranges (0–20, 21–40, 41–60, 61 and over), this would be ordinal data because it has categories that have an inherent order to them. A similar procedure could be done with income as well.

These distinctions matter because the type of data you have at hand determines the type of statistical test or measure you can use to assess the relationship among variables. While political scientists can sometimes choose the format for their data because they are gathering it themselves, oftentimes, they cannot. Datasets might already be preassembled, for example public opinion polls or data from the US Census Bureau. Even when political scientists can decide what type of data to gather, there might be a reason to collect it in one form or another based on previous research or the type of analysis they wish to perform.

Before examining some example quantitative methods, it's also worth delving briefly into what quantitative data may actually look like. Consider a hypothetical public opinion poll given among the students at your school that asks four questions with the associated answer options:

1. What is your gender? (female, male, nonbinary)
2. What year in school are you? (freshman, sophomore, junior, senior)
3. What is your annual income? (provide specific number)
4. Which political ideology do you most closely associate with? (extremely conservative, conservative, lean conservative, independent, lean liberal, liberal, extremely liberal)



**TABLE 2.1 ■ Hypothetical Coded Survey Responses**

Respondent Number	Gender	Year in School	Income	Political Ideology
1	2	3	26,000	7
2	1	2	19,500	6
3	3	4	21,000	3
4	2	1	18,000	4
5	1	4	22,000	6

While you might collect answers via an internet survey tool or even pencil and paper, responses to these questions must be put into a usable format for further analysis. While income as an interval variable is easy to simply put in a spreadsheet, nominal and ordinal variables cannot be. Instead, we assign response categories numbers so that a quantitative analysis can be performed. In the first question on gender, female would be coded 1, male would be coded 2, and nonbinary coded 3. Year in school would result in freshman being 1, sophomore 2, junior 3, and senior 4. Finally, the ideology scale would begin at 1 for extremely conservative and proceed to 7, extremely liberal. Table 2.1 shows a hypothetical spreadsheet for responses from five students.

The top row of Table 2.1 contains the responses of respondent number 1. The coding on this indicates that this respondent is a male, is a college junior, has an annual income of \$26,000, and considers himself to be extremely liberal. On the other hand, respondent number 3 is a nonbinary college senior with an annual income of \$21,000 who considers themselves to lean conservative. Once the data has been gathered and input into a spreadsheet similar to Table 2.1, we can utilize statistical software packages or even just Excel to examine relationships between and among variables. To explore these ideas just a bit more, let's consider just two: correlations and regression analyses.

### Assessing Relationships

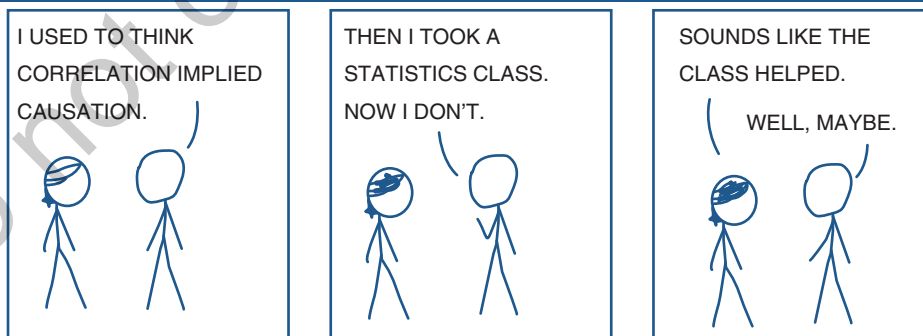
While basic patterns in a single variable can be informative, political scientists often want to know not only which independent variables influence a dependent variable but the extent to which they do so. We can begin by assessing directional relationships between variables. A positive relationship occurs when both an independent and dependent variable move in the same direction. Consider for a moment public opinion on something like social security as a dependent variable and age as an independent variable. We might find that as age increases, support for social security also increases leading to the finding of a positive relationship. A negative relationship, on the other hand, occurs when independent and dependent variables *do not* move in the same direction; in other words, as the value of one variable increases, the other variable decreases. If, as age increases, support for social security decreases, the relationship would be negative. Data from the General Social Survey indicate that over the past five years, the relationship between support for more social security spending and age is indeed positive.

Knowing the direction of a relationship is only the first step—the next is knowing the strength of the relationship between variables. One means of doing so is through a quantified measure of correlation. A **correlation** happens when two things happen at the same time (see Figure 2.1). This does not necessarily mean that one causes the other, but it does give some evidence that a relationship exists between the two variables you're examining. For example, refer back to the question and hypothesis about congressional activity. The hypothesis is that as party polarization increases, the rate at which Congress passes laws goes down. The hypothesis suggests that party polarization is causing fewer laws to be passed; therefore, party polarization is our independent variable and laws being passed is our dependent variable. Both of these variables can be quantified with party polarization being measured through DW-NOMINATE scores (discussed in Chapter 8) and laws passed as a simple frequency of how many laws Congress passes in a given year.

For quantitative methods, we want to have enough data where we can see patterns of change over time; if the data simply stayed the same or there were only five data points, there would not be any variance to quantify. For this example, we could gather both DW-NOMINATE scores and how many laws are passed per year for fifty years. Then, using a statistical program, we can calculate a score showing us whether the two variables are correlated and how strong the relationship is (this score is called a Pearson's  $r$  and can be hand calculated as well). The correlation score, the Pearson's  $r$ , falls between 0 and 1 with a score closer to 1 indicating a stronger correlation and a score closer to 0 indicating a weak correlation. Pearson's  $r$  can also have a positive or negative sign demonstrating the direction of the relationship between the variables.

But what if there are other variables that could be causing Congress to be less productive? Could it be something about the makeup of Congress itself? The parties that are in charge? The issues that they're dealing with? We can deal with these scenarios as well but not in the form of a correlation. A more advanced method of determining this relationship is something called a **regression analysis**. And while this exploration won't go into exacting detail on how this works, you can gather data on multiple independent variables and, again, using a statistical program, calculate how much each variable affects the overall relationship while holding all of the others

**FIGURE 2.1** ■ Causation and Correlation



Source: "Correlation," xkcd.com, accessed January 12, 2023, <https://xkcd.com/552/>.



constant. In a sense, this method is about controlling all of the possible conditions that may affect the core relationship you're trying to find. It's a statistical version of laboratory control that hard scientists use in a sterile environment.

There are many other quantitative methods that can be used depending on the data you have. A Pearson's  $r$  can only be used with two interval variables; if you have a combination of different variables—say an interval and an ordinal or a nominal and ordinal—different statistical measures would be used. Depending on what the data looks like and what you're trying to discern from it, different models other than regression may be appropriate. Again, don't get too stuck in the weeds now; if you're interested in methods, more specialized classes are available. What's important to understand from this is that quantitative methods take hypotheses and turn them into research problems where we can measure numerically the variables and the relationship between them.

## CAREER GUIDANCE

Statistics is not a tool exclusive to political science—many different professions utilize statistical analysis, including business administration, health care, insurance, and economics. Think about taking a class specifically in statistics to gain skills that will be applicable in many career fields.

## Costs and Benefits of Using Quantitative Methods

Like just about everything in this world, there are good and bad things about using quantitative methods to answer your research questions. First, short of a true experiment (which may be either impossible or unethical to perform), using statistical controls most nearly approximates the ideal laboratory setting. This claim holds as long as you're specifying what variables you're controlling for and including variables that you think may be contributing to the relationship. When done well and properly, statistical methods are powerful for demonstrating that a relationship exists between independent and dependent variables. But be careful: Statistics can also be done poorly; if you play with the data too much or use the wrong statistical test, quantitative methods can do as much harm as good. This is the root of the saying “damned lies and statistics.” If you manipulate enough data enough times, you can make it say whatever you want.

A second pro about quantitative methods is that numbers and their significance are usually easy to understand. If there is more of one thing when there is less of another, these numbers and quantities are something that is easily communicated and understood. Another saying that can also be brought to bear on this is that “numbers never lie.” While we aren't here to debate the truthfulness of such a statement, when you quantify something, it does make it harder to argue about whether it is true or accurate. If we say that Congress passed fifty-five laws in one congressional session, not many people will be able to quibble about whether that is true or not.

Additionally, depending on the research project, quantitative data can usually be assembled with fewer resources than in more advanced qualitative methods. There are numerous data sets

already available online, and the internet can be used to assemble data on many different topics (some of these are listed in the For Further Reading section of this chapter). Where it used to be far more difficult in the past to find such information, the internet has made researching far less of a hassle than it was in years and decades past. Once the data are assembled and you know the correct statistical tests to use and how to interpret them, completing an analysis is simply a matter of time.

But what about the possible pitfalls to such methods? For one, what do the numbers actually *mean*? What connection do they have to reality, to politics, to the phenomena we're trying to study? Lacking more information on the context or origins of the numbers, it's difficult to understand just what their significance and meaning are. What does it really mean if we say that congressional productivity decreases by a certain percentage when party polarization rises? Are DW-NOMINATE scores a true measure of party polarization? How do we know the numbers mean what we want them to say? This is a particularly sticky problem when we take broad concepts like success or power and try to put a number to them. How will we ever know that the number we assign or calculate really means what we think it does?

Another con to quantitative methods is that the person using them should have a sufficient level of knowledge and training to be able to understand what they are doing to the data and why. Another common saying is "garbage in, garbage out." For our purposes, this means that if you put bad data into the analysis, you won't get good conclusions; you'll just get faulty information and perhaps misinformed data. Quantitative scholars should be well versed in the methods that they use and be able to justify what they've done to the data and why their procedures make sense.

## QUALITATIVE METHODS

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**Qualitative methods** encompass several different types of methods, but what they all have in common is deep description and heavy textual and event analysis. While statistical analysis is used by quantitative scholars to approximate to the best of our ability an experiment, we can look at qualitative methods as approximating a microscope. These types of analyses dig deep into events and cases in an attempt to specifically trace the causes of a particular event. We put an event under a microscope to try and tease out what led to what and in what order. For our purposes here, we'll describe three types of qualitative methods that can be used either separately or together for a stronger type of analysis: case studies, process tracing, and the comparative method.

### Case Studies

The basis of most qualitative methods is usually considered to be the **case study**. George and Bennett describe the case study approach as "the detailed examination of an aspect of a historical episode to develop or test historical explanations that may be generalizable to other events."<sup>1</sup> Researchers gather information on events and people and try to piece together the sequence of events that led to the ultimate outcome. If we return to one of the example questions and hypotheses we developed at the beginning of the chapter, we might wish to use the case study approach to examine what led to Russia's incursion into eastern Ukraine in 2014. In order to do so, we would gather news accounts, first person statements, and other data and lay out in detail

the events that led up to the invasion. Based on this data, we may find evidence for or against our hypothesis that Russia and Russian leaders invaded Ukraine because of fear of European involvement in Russian affairs.

A caution is in order at this time. Clearly, it would be easy to bias the case study description and findings so that the only logical conclusion stemming from it is that our hypothesis is supported. You should take pains to avoid this possibility since, if it's done knowingly, it is highly unethical. As scientists, we want to look at *all* the evidence, including the evidence that might not support our hypotheses. Even if the data doesn't support our hypotheses, if we can draw conclusions from it, we can still say we learned something even if our original guess turns out to be wrong.

## Process Tracing

When performing a case study, some qualitative scholars take special care to perform an analysis we call **process tracing**. Process tracing “attempts to trace the links between possible causes and observed outcomes. In process tracing, the researcher examines histories, archival documents, interview transcripts, and other sources to see whether the causal process a theory hypothesizes or implies in a case is in fact evident in the sequence and values of the intervening variables in that case.”<sup>2</sup> You can think of process tracing as creating an outline of what causes something else; you look at the case very carefully so you can say that A leads to B, which leads to C, which leads to D. In doing so, we're taking a microscope to our case and watching an event unfold.

An obvious question at this point is how this differs from history. It is true that both history and qualitative political science often share common methods of archival research, interviews, and first person accounts, but there are subtle differences between the two disciplines. Political scientists tend to search for larger explanations of phenomena across time—for example, what causes revolutions? History, on the other hand, sees events as contextually and historically bound; they are not necessarily searching for overriding theories or models that can explain disparate events. At the end of the day, some political scientists will eventually conclude that certain events are time or history bound in the sense that they would not happen at any other given period, but many political scientists are searching for larger answers to the question of why.

Once we understand what a case study is, we can use it to build up our research repertoire. Rarely do we see a singular case study; often, political scientists combine multiple case studies in order to be able to generalize their findings a bit more broadly. To continue with our Russia example, in addition to the case study you might perform on Russian actions in Ukraine, you could combine that with a second case study on the Russian invasion of Georgia in 2008. You could see whether the same explanation holds in both cases or whether the explanation differs and why. Being able to explain multiple cases with a single hypothesis is a good thing; it bolsters your certainty that your hypothesis is correct and it makes it easier to convince other people that you're right as well.

Another purpose that case studies fulfill is generating hypotheses. If a series of events are occurring and we're not sure exactly why, a set of case studies can be performed to give us some ideas about common causes across cases. What do the cases have in common? What is different? Was the chain of causation similar or different? We still have to understand that the hypotheses that are created out of such case studies might not be generalizable or applicable to other situations, but the knowledge created and detailed in such cases can point the way in future research.



Researchers carrying out process tracing must examine multiple types of sources to better understand the causes of an event.

Peter M. Fisher/The Image Bank/Getty Images

### Comparative Method

A third qualitative method that can be used with case studies as the main component is the **comparative method**. Using the comparative method, political scientists will select a series of cases to test their hypotheses through. Ragin, in his highly regarded book on the comparative method, says that “What distinguishes comparative social science is its use of attributes of macrosocial units in explanatory statements. This special usage is intimately linked to the twin goals of comparative social science—both to explain and to interpret macrosocial variation.”<sup>3</sup> What Ragin means by macrosocial variation is that comparative social science compares what is going on between societies instead of within them. Comparativists can then use the similarities and differences at the societal level to explain, interpret, and understand causal processes.<sup>4</sup> Comparative politics and the comparative method are further examined in Chapter 9.

For such a comparative method to work, scholars must be very careful about picking their cases. In quantitative methods, this isn’t so much of a problem because all applicable cases are studied, but case selection is crucial in qualitative methods. Let’s take the immigration policy research question and hypothesis from earlier. As a reminder, our question asked what influences US immigration policy in the twenty-first century, and our hypothesis is that immigration policy in the United States is influenced by economic and political factors. If we were to do

a comparative case study to examine this topic, we might pick two or three years in which immigration has been a hot-button issue in the United States. However, let's say that there's a case of immigration policymaking that you *know* does not fit your hypothesis. If you purposefully leave that out, you are making it more likely that you will prove your preferred hypothesis. This is called choosing cases on the dependent variable, or selection bias. The comparative researcher must be especially careful in choosing their cases and should provide the reader with an explanation of why the cases that were included were chosen.

### Costs and Benefits of Using Qualitative Methods

The pros and cons of choosing qualitative methods mirror those of quantitative methods. Using a qualitative method, you may be able to understand the causal mechanisms or the variables that contribute to the case you are trying to understand more precisely and specifically. Using a statistical method, the most you'll be able to say is that there is a correlation or a relationship among variables; you can never say for certain that A led to B. While this might not always be possible even with qualitative methods, getting into detail on a singular case will get you closer to the ability to say that.

That being said, although you may have a conclusion about one or a few cases, you may not be able to apply that to the whole universe of cases. Lacking experimental or statistical controls means that you won't be able to hold all possible variables constant so as to single out the one or two independent variables that you're most interested in. In choosing qualitative over quantitative, then, you're sacrificing breadth of explanation for depth of explanation.

Using qualitative methods, you can give numbers and variables meaning and context. Having such in-depth knowledge on your topic will give you, the researcher, the ability to determine whether those numbers and concepts are meaningful and important in the question you are researching. Telling someone that Congress has passed a certain number of laws in one year is one thing, but is that number high, low, average, exceptionally high, or exceptionally low? The context often has more meaning than the number. The other side of this argument, however, is that people may be able to argue just what that context is. Rational people can and do disagree on what particular data points mean, and this is often the case even in qualitative research.

Qualitative research often requires more time and resources to get primary documents, do fieldwork, and piece together various pieces of evidence, but instead of general numbers, you will be able to understand exactly what happened in your cases. Both quantitative and qualitative methods involve some aspects of judgment on the part of the researcher, so both would require the knowledge of the particular skills needed to properly conduct research on your subject.

## QUANTITATIVE AND QUALITATIVE METHODS IN POLITICAL SCIENCE

Quantitative methods involve turning concepts and variables into numbers and using that data to perform statistical or mathematical tests, and qualitative methods are more analytical, often involving deep description and causal tracing. Mahoney and Goertz perform an excellent comparison of the two on the basis of ten different criteria, including how each method approaches explanation, how they conceive of causation, their scope and ability to generalize,

and the impact of significant cases (see Table 2.2).<sup>5</sup> The following discussion draws from their examples and arguments.

Both quantitative and qualitative methods seek to explain why an independent variable or set of independent variables cause a dependent variable, but how they go about doing so is quite different. Qualitative research, because it is more in depth and detail oriented, simply does not have the ability to cover many cases at once. If we were to do an in-depth case study on all instances of Russian aggression, for example, we would run out of time and paper. As such, qualitative work tends to focus on just a handful of key cases. Mahoney and Goertz call this a

**TABLE 2.2 ■ Mahoney and Goertz Research Comparison**

	Qualitative	Quantitative
Approach to Explanation	“Causes of effects;” qualitative research examines a few cases and tries to work backward to identify the cause of an event	“Effects of causes;” quantitative research examines many cases via statistics to pinpoint important variables
Concepts of Causation	Ability to say that A causes B	Ability to say that A has a tendency to cause B
Multivariate Explanations	Focuses on impact of combinations of variables and only rarely on the effect of individual variables	Focuses more on estimating the effect of individual causes
Equifinality	There are multiple causal paths to the same outcome	There is only one causal path to an outcome
Scope and Generalization	Conclusions speak only to the particular cases; may not be generalizable	Results may be generalizable over many cases but may not apply specifically in any one
Case Selection	Pick cases based on the presence of the dependent variable	Random selection of cases based on independent variables
Weighing Observations	Some cases, like outliers, may be more important than others	All cases are equally important
Substantively Important Cases	Substantively important cases should be explained	Substantively important cases not given special attention
Lack of Fit	Outlier cases closely examined and explained	Nonsystematic causal factors are seen as errors
Concepts and Measurement	Concepts are important; errors lead to the revision of core concepts	Measurement of indicators are important; errors lead to development of new measures

Source: Adapted from James Mahoney and Gary Goertz, “A Tale of Two Cultures: Contrasting Quantitative and Qualitative Research,” *Political Analysis* 14 (2006): 227–49.



“causes-of-effects” approach; qualitative research examines a few key cases and works backward to try and understand what caused the events to happen in the first place. On the other hand, quantitative methods can be used to examine a high number of cases all at once since the data is quantifiable and able to be analyzed in a statistical manner. When this is done, quantitative analysis can be used to find the “effects-of-causes” and pinpoint what variables are significant in determining a dependent variable.

But what about the significance of conclusions in each case? In the first instance, qualitative methods may only be able to speak with certainty about the causes of the particular cases chosen; the conclusions may not be generalizable to every possible instance. For quantitative methods, the results will be generalizable over all of the cases but may not fully explain any given case. Because of these differences, scholars are very careful about the types of conclusions they make about the data they have. According to Mahoney and Goertz, qualitative scholars will “adopt a narrow scope” to make sure their conclusions fit their data while quantitative scholars will be more broad in their findings.<sup>6</sup>

However, an important question arises out of this difference: Which type of conclusion is more significant or valuable? This falls under Mahoney and Goertz’s criteria of causation. Is it better to be able to definitively say that A causes B in this one case only or that A has a tendency to influence B over a number of cases? This is a key difference between qualitative and quantitative political scientists, and there is no right or wrong answer; your position on it will hinge on what you believe to be more valuable to your research as a whole. Qualitative social scientists are more logical in trying to trace out a cause to effect; they use what we know as necessary and sufficient conditions to try and identify what causes a particular event and will often go into deep detail to support their conclusions. On the other side, quantitative analysts use statistics and probability to be able to say that A or B are *likely* or *not likely* to have caused the outcome under study.

Another comparison to be made, then, is the significance of individual cases or events under study. For quantitative researchers, all cases are equally important—even if there are what we call outliers. Outliers are particular cases that fall substantially above or below the average data point. For example, if Congress passes, on average, fifty laws per year and in one year they pass 200, this year would be considered an outlier. If we were studying this quantitatively, we might not be all that interested in this outlier, but if we were studying it qualitatively, this outlier would be incredibly important. Why was it so much higher in this particular year? What was special about the conditions Congress was operating in? What does it tell us about congressional productivity? Thus, in qualitative methods, outliers are very important and can change overall observations, analysis, and conclusions.

### What’s the Big Deal?

So, what’s the big deal? Why all the fuss in political science about which to use or which is better? As alluded to in Chapter 1, the debate between methods is one that is practically built into the discipline of political science. Where much of the early political science research was decidedly qualitative, the behavioral revolution after World War II changed the perspective of the discipline and reoriented it toward more quantitative, statistical methods in an effort to be more

scientific and rigorous. Quantitative scholars will argue that qualitative research hardly stands up to scientific standards of examination, thereby relegating qualitatively derived findings to a lower status than those found quantitatively. This movement drove political science through much of the second half of the twentieth century, and many of the major political science publications reinforced the perspective in preferring or appearing to prefer quantitative research articles.

The debate comes down to the question of how do we know what we know, or what data, what evidence can we trust? Quantitative scholars believe in a deductive approach to political science, generating hypotheses and testing them against available data. Because the statistical method is what comes closest to approximating the experimental gold standard, they believe that those sorts of findings should be more highly valued. On the other hand, qualitative scholars often rely on more of an inductive method, using selected cases to determine hypotheses that might cover all possible cases. Because qualitative analysis delves into details and context, qualitative scholars believe findings developed through those methods are more relevant and applicable than numbers that do not necessarily mean anything outside of a statistical program. Some political scientists will argue that if the political science field wants to be considered a true science, then it must be as rigorous and scientific as possible. For them, this means that quantitative methods are the only acceptable means of testing hypotheses.

### How Do We Know What We Know?

The field of political science was also highly influenced in the mid-twentieth century by developments in the philosophical field of **epistemology** (how we know what we know) and histories of science. In particular, Kuhn, in a book originally published in 1962, lays out his theory of what science is and how it develops. In *The Structure of Scientific Revolutions*, Kuhn argues that “normal science” is “research firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges for a time as supplying the foundation for its further practice.”<sup>7</sup> He goes on to argue that a sign of maturity in a field is the acquisition of a paradigm, or a tradition of practice. For political scientists who desperately wanted to make their field more scientific in the mid-twentieth century, the only way to become so was to follow Kuhn’s prescription and adopt a tradition of quantitative studies of political science. However, adherence to this dictate does not abide by Kuhn’s arguments as a whole. Elsewhere in the book, he states that “methodological directives, by themselves” are insufficient to generate conclusions.<sup>8</sup> Thus, adopting a methodological purity without some sort of guiding theory is itself insufficient for representing “normal science.” This did not stop the focus on making political science a “better” science; the push for quantitative methods is itself demonstrative of that.

Another development in epistemology that greatly influenced midcentury political scientists was the idea of falsification of hypotheses rather than proving them. Karl Popper was a German philosopher who also worked on this question of what science is and what it isn’t. For Popper, what was scientific and unscientific came down to a question of “demarcation.” Instead of arguing that science is attempting to rigorously study and prove an idea, Popper argued that we can never truly *prove* something to be correct. We are not omniscient; we do not know of

every possible situation that could possibly exist, so it is impossible for anyone to *prove* something. Instead, Popper defines science as being able to falsify or disprove hypotheses.<sup>9</sup> In order for a hypothesis to represent a scientific advance, it must be falsifiable; when we are testing a hypothesis, then, we are trying to disprove it. We can never prove that we are correct; we can only say that to the extent of our knowledge, the hypothesis has not been disproved. Popper and Kuhn influenced political science as a field in their movement toward becoming more rigorous and scientific, which in the minds of a majority of political scientists at the time was quantitative in nature.

Smith argues that this debate is particularly meaningful in political science, whose “inquiry is undertaken to serve human interests” and whose findings necessarily affect those studying the question and those being studied.<sup>10</sup> Politics is personal for many people, so how we study it and the findings we make can become not only important for the researcher and the researcher’s career but for the institution or the situations in which the findings may be applied. As Smith writes, “Political science is more likely to be seen as important and worth sustaining, and to be sustained, if it illuminates political topics that most people care about in comprehensible ways.”<sup>11</sup> Because of this deep importance, the way we study politics becomes all the more important.

### The Research Methods Debate in Political Science

In reality, there is probably no real answer to which method is better; it is a highly personal question that often hinges on individual beliefs about the nature of reality and the nature of knowledge. But the problem, as many qualitative scholars have perceived it, is the monolithic way in which the political science establishment has preferred quantitative methods over qualitative and the edge that has given quantitative researchers. When we talk about the “establishment” in political science, we are referring to the community of academic scholars who reside in universities and colleges throughout the country. One of the key things to understand about these professors is that for the vast majority of them, promotion in rank and acquisition of tenure is dependent on their ability to publish research in books and in political science journals. In fact, for many young scholars, the motto is that they must “publish or perish.” If one set of methods is preferred by publishers and major journals over another, it privileges one set of scholars over the other.

That is exactly the situation that political science found itself in as we moved into the twenty-first century. Qualitative scholars felt discriminated against because their work could not get published and they could not advance as quickly or as highly as the establishment quantitative scholars. Even books that purported to bridge the divide between the two methodologies seemed to favor quantitative methods. Further, some subfields of study, such as feminist politics, used qualitative methods to a far greater extent than others; if fields such as these were being ignored because of the methods being used, some scholars claimed that whole groups of people, including women and minorities, were being ignored.<sup>12</sup> The effects of this privileging in turn manifest themselves in significant gender and minority gaps in political science publishing. In 2001, for example, Matthews-Gardner and Andersen reported a significant gender gap in book authorship across political science—in international relations alone, between 1995 and

1997, 86 percent of authors published in edited books were men.<sup>13</sup> As a result, a movement arose in the early 2000s for greater recognition and acceptance of qualitative methods research as well as diversity within the profession.

This period of debate and discussion among political scientists did result in a larger appreciation for qualitative methods and the ways in which both quantitative and qualitative studies contribute to one another.

Books about both methodologies abounded, many of them purporting to offer middle ways, solutions encompassing both qualitative and quantitative work. Studies of the extent to which the quantitative-qualitative divide penetrated political science were extensive, helping to underscore the ways in which quantitative methods were privileged over others. In one study of research methods texts that were used to teach young political scientists about research methods, for example, Schwartz-Shea and Yanow find a distinct preference in favor of quantitative methods.<sup>14</sup> Even as late as 2015, Emmons and Moravcsik found that only 60 percent of political science PhD programs in the United States offered any sort of qualitative methods training.<sup>15</sup> Schwartz-Shea and Yanow argue that, as a result, the indoctrination of political scientists into quantitative methodology is only continuing and being reinforced as a consequence of the types of texts that are being used to teach them.

While there is a greater appreciation and acknowledgment of qualitative methods today, controversies still abound. Barkin argues that the very term *qualitative methods* is ill-defined and amorphous, especially compared to the specific tests and tools that quantitative methods have to answer a particular research question.<sup>16</sup> As a result, “Since there is no discrete set of methodologies, one cannot claim to have covered it comprehensively.”<sup>17</sup> Similarly, quantitative research continues to fill the pages of the top journals. And while gender gaps in publishing and citation have become smaller, they still exist. Dion, Sumner, and Mitchell find that even in subfields that have a higher percentage of women, published research is still more likely to cite male authors.<sup>18</sup>

So, is there an establishment answer to quantitative or qualitative? If there is one, it probably still leans toward the quantitative end of the spectrum, but it does not have to be that way. There is a growing education in and acceptance of qualitative methods; many scholars promote a multi-methods approach. While it does not take the side of either methodological approach, it argues that the better method is to select the right tool with which to answer your question.

### Let Your Question Be Your Guide

Reminiscent of Jiminy Cricket’s intonation to “let your conscience be your guide,” the best answer to the question of which methods you should choose is that you should choose the method that best fits with the question you are asking. In other words, if your question and hypothesis necessarily lend themselves to a quantitative methodology, then that’s what you should choose. If it calls for qualitative work, then go with that. To give some examples, let’s return one more time to our research questions and hypotheses from earlier in this chapter.

Q: What motivations does Russia have in invading Ukraine?

H: Russia was motivated to invade Ukraine because of a fear of European and NATO encroachment in supposedly Russian affairs.

Q: What influences immigration policy in the United States in the twenty-first century?

H: Immigration policy in the United States is influenced by economic and political factors.

Q: Why has there been a downturn in the frequency of laws passed in the US Congress?

H: Congress has passed fewer laws because party polarization has increased.



People around the world are protesting the 2022 invasion of Russia into Ukraine.

Nick Ut/Getty Images News/Getty Images

The first question and hypothesis have to do with Russia's incursion into Ukraine. While Russia first annexed the region of Crimea and supported uprisings in eastern Ukraine in 2014, beginning in 2021 they once again put pressure on Ukraine, mounting a massive military force on its border before invading in February 2022. The best set of methods for answering such a question about their motivations would most likely be a qualitative method based on case studies. The researcher would be able to gather primary documents, news reports, and interviews with key players to detail the chain of events that led to the Russian actions. As suggested previously, the study could even be enhanced with multiple case studies examining other Russian actions in the region, including the 2014 annexation and Russia's previously invasion of Georgia. On the other hand, the third question and hypothesis on the frequency of laws passed in the US Congress would best be

answered through quantitative methods. In fact, numbers are built into the question itself in terms of frequency and party polarization scores.

But what about the second question? What method best fits in that situation? This is where the skill and craft of the researcher comes into play. The independent variables in the second case include economics and politics while the dependent variable is immigration policy. If some way exists to quantitatively measure those three variables, a quantitative method might fit best. This can be done through measures such as GDP or inflation for the economy, political parties or other variables for the political part, and the number of immigration regulations for immigration policy. The researcher could then perform the requisite statistical tests to look for relationships between the variables. Alternatively, you could also perform case studies into some instances of immigration policymaking in the United States to look for the influence of economic and political variables. In reality, either approach is acceptable, or some scholars may even choose to *combine* both the quantitative and qualitative studies to enhance their research. If you can make the same or similar conclusions using different methods, this only enhances your conclusions (we call this **triangulation**).

The biggest problems with choosing the appropriate methods usually come when researchers try to pigeonhole a question into a particular method—for instance, a quantitative scholar wants to research something that is hard to put into numerical values. Some will try to force the issue, devise complicated means of measuring their concepts, all in the belief that their preferred method (in this case quantitative) is the best. This also can happen to qualitative researchers who refuse to use any numbers when those data may in fact make their research better. Both scholars find themselves slavishly devoted to their choice of method in the belief that that is the only way to truly prove their argument is correct.

## CASE STUDY

### DEMOCRACIES AND CONFLICT

One of the major questions that scholars in international relations and comparative politics seek to understand is this: When do countries go to war? Is it when they perceive their national interest to be at stake? If so, what is that interest? Is it in the interest of human rights' violations? Is it because of another belligerent country? While the question is fairly broad, we can make it more limited and specific by focusing on democracies: When do democracies go to war? The democratic peace theory suggests that, at a minimum, democracies will not go to war with each other, but we know that there are times when the United States has entered a conflict.

Before settling on a potential research design, a first step here would be to define our concepts—especially the ideas of democracy and war. As will be discussed in later chapters, there are several ways to define both. For our purposes here, we can utilize two commonly used definitions in the literature: a democratic government is one in which there are free,



fair, and frequent elections, and war is a conflict between two entities with casualties numbering more than 1,000. Given these definitions, what might be some hypotheses as to why democracies would go to war?

Once you have developed a hypothesis or hypotheses, you must decide on your research methods. While we should always let the question guide us, in this instance, either quantitative or qualitative methods will suffice. How might you design a quantitative study to answer the question and a qualitative one?

**Quantitative:** Create a database of all wars in the world since World War II and the countries involved in them (we call pairs of data points *dyads*). Variables to be included would not just be whether a country involved was democratic or not but other variables that could cause war, including economic indicators and ideology, such as communism. Utilize statistical methods to determine whether there are any patterns of circumstances when democracies go to war.

**Qualitative:** Select a small number of case studies of wars with some that involve democracies and some that do not. Examine in depth these cases to determine why the democratic countries went to war. Are there any generalizable conclusions that can be found across the cases?

### Critical Thinking Questions

1. How do the quantitative and qualitative research designs differ?
2. What advantages does each have?
3. Are these two research designs complementary? Are there any benefits in combining them and doing both?
4. Are there additional methods you can think of to answer the research question?

## CHAPTER SUMMARY

- Research questions should be specific and tailored to the phenomenon you're trying to study. Hypotheses are proposed answers to these questions.
- Hypotheses identify the variables that are analyzed to determine whether the hypothesized relationship exists or not.
- Hypotheses can be tested via quantitative or qualitative methods. Quantitative methods utilize statistical and mathematical tests while qualitative methods rely on deep description and analysis of primary and secondary documents.
- Quantitative and qualitative methods provide researchers different types of analytical leverage.
- Political scientists have historically preferred quantitative methods, but there has been a growing appreciation for the role qualitative methods can play.

## KEY TERMS

case study	nominal variables
comparative method	operationalization
conceptualization	ordinal variables
correlation	process tracing
dependent variables	qualitative methods
epistemology	quantitative methods
hypothesis	regression analysis
independent variables	triangulation
interval variables	variables
literature review	

## DISCUSSION QUESTIONS

1. What is the difference between quantitative and qualitative methods? Why does it matter?
2. Come up with some possible research questions and hypotheses. Are they specific enough? Can you make them more specific?
3. What types of methods could you use to answer your research questions? Why?
4. Which methodology do you believe is the strongest for providing reliable evidence? Why?
5. Ask your professor about their training and experience in methods. What were they taught as a graduate student?

## FOR FURTHER READING

American National Election Studies: [www.electionstudies.org](http://www.electionstudies.org)

General Social Survey: [www.gss.norc.org](http://www.gss.norc.org)

Kuhn, Thomas S. *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press, 1996.

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