

Making Your Plan and Protecting Yourself from Criticism

The Research Design

With the conceptual framework of your paper completed, you have one more step to undertake before proceeding with your analysis: the Research Design (RD). By now you're at mile 12 in the paper-writing marathon.¹ You're almost halfway done, but you're starting to hurt. How are you going to make it? This is a difficult point, but if you can just keep going, the excitement and adrenaline rush that will come from being ever closer to the end will propel you on. Just hang in there and keep working.

Depending on the expectations of your faculty member, your RD could become quite sophisticated, and you could be asked to consult methodology textbooks and take a whole course on this issue alone.² For others of you, this chapter will suffice in summarizing the basic logic for testing a hypothesis and for explaining the writing goals involved. In the RD section, you are communicating your plan for evaluating whether your thesis can be sustained, and you will explicitly defend the choices you make regarding which instances of the phenomenon you are studying, how to translate your concepts into knowable entities, and which types of sources or actual information you will use to determine their values. In addition, you explain exactly how you will perform your analysis. In effect, the RD is a first line of defense against criticism of your conduct of the project: you present the logic for your decisions so that readers can see that you have made the best choices about how to proceed, given the limitations that face social scientists (i.e., not rocket scientists!)³ regarding concept formation and translation, case selection, data availability, and general design issues.

Typically, the Research Design section completes four and sometimes five tasks. While I am presenting them in a certain order, you will later see that

often you need to consider several factors simultaneously. Your to-do list includes the following:

1. select cases for study;
2. define the key concepts and establish a strategy for knowing their values (recognizing that values do not have to be quantitative);
3. identify sources of information for your analysis;
4. if necessary, write instruments, such as surveys or interview questionnaires, for generating information; and
5. discuss methodology, explaining exactly what you will do and how.

Try to work through each step and then move on to the next; however, recognize that sometimes you may need to reconsider an earlier decision. In addition to setting out your plan here, you also justify your choices and strategies as the best for evaluating your thesis given the constraints (including resources and time) under which you are operating.

RESEARCH DESIGN: THE MEDICAL SCIENCE ANALOGY

While these five steps might be clear enough, why and for what purpose you undertake them might be fuzzy. So let's turn to research that is, I hope, familiar so that you can see an analogy to your tasks. If you watch, listen to, or read the news on a regular basis, you will hear reports about the latest medical or drug tests. One of the first things to notice about these results is that physicians are often finding that what they thought earlier is now wrong or at least open to question. Going back in history, we may remember that doctors once used leeches to bleed patients in the hope that this would eliminate all the bad elements and speed recovery. While medicine has come a long way from bloodletting, remember that negative findings (that the hypothesis is not upheld) are just as important as positive ones (that the information seems to sustain the argument). A researcher is proud of following the appropriate process and doing a good job in the evaluation, not of being right, that is, confirming a hypothesis.

Second, our medical analogy reminds us that evaluating a claim involves determining whether what we think is important really is. The medical community may know, for instance, that being physically active is essential for maintaining cardiovascular health, especially for those who are likely (because of family history or other behaviors, such as smoking, for instance) to have heart attacks. I might want to know, however, whether vigorous exercise three times a week is more useful than moderate exercise every day in combating heart attacks among those at risk for them. If I pursue this research, I am investigating a model:



Its corresponding hypothesis is “Vigorous exercise three times a week is more likely to reduce the risk for heart attack than is daily moderate exercise, although both are better than being primarily sedentary.”⁴ Here, I have a discrete variable (type of exercise) for my independent variable and a continuous one for my dependent variable (likelihood of heart attack). I am asserting that exercise—of a certain form and regularity—matters for cardiovascular health in those at risk. Is my supposed value—vigorous exercise three times a week—really better? Will it keep vulnerable people from having heart attacks?

This medical hypothesis highlights nicely the ideas of cause and effect and the contingency of the claim. Here, I am saying that vigorous but less frequent exercise will have clearer positive outcomes (avoiding heart attacks) than will moderate daily exercise. Similarly, back in chapter 5, Kevin was asserting that more access to independent old and social media would increase citizen activism and increase the likelihood of a regime’s fall, while Gabriela claimed that the contemporary party and electoral system result in more polarization today. In each case, does the factor posited—vigorous exercise almost every other day, more media access, and these new political and electoral arrangements—actually lead to the posited outcome—fewer heart attacks among people at risk, higher probability of regime collapse, and more polarization?

To answer that question, we must design a study that determines whether our factor is what is really responsible for the difference. That simple statement has many important points packed into it. Returning to the medical example alone, to figure out whether vigorous three-times-a-week exercise is the better form of activity, we have to also be sure that

1. we can isolate a group of people who are at risk for a heart attack;
2. we hold that level of risk relatively constant throughout the group by being sure that all or even some of the people aren’t by their genes and family histories or their behavior—such as smoking (which would increase) or becoming vegetarians (which would decrease)—at different levels of risk for recurrent heart attacks;
3. we know what the approximate risk level is for this group; and
4. we can put these people into subgroups, one that exercises vigorously three times a week, one that exercises moderately every day, and a last that is sedentary, in order to monitor the effects of our key factor.

In thinking about what needs to be done to evaluate our hypothesis about exercise and heart attacks, we gain insight into political science research. Each of the points above (1 through 4) corresponds to the following methodological considerations in our research project:

1. We can identify a group of common incidents or cases. For medical research, a case is often a person and her or his health outcome. But in political science, a relevant instance can be many things. If we wondered, as Zoe does, whether a critical mass of female legislators can affect the amount of gender-sensitive legislation, a case would be a particular congressional session. In her alternative hypothesis, Zoe wants to explore whether the gender of a legislator influences the types of bills that person introduces. Here, a case would be a single elected official. For Max, the interest is in explaining post-Soviet Russian intervention policy; thus, he must look at temporal and geographic instances when Russia intervened or didn't (for instance, Ukraine in 2014 or Estonia in 1993). When we consider cases or specific instances, we also need to ask ourselves, to do a good job on our research, must we study all the cases (the *universe*), or can we evaluate a *sample* (a subset) of them? Medical research rarely looks at the universe; it is virtually impossible to control the behavior of all people who are at risk for something doctors are trying to understand. However, when we sample, we must choose very carefully.
2. As we seek to assemble a good sample, we need to know the factors others think affect the phenomenon in which we're interested, and we must try to minimize their impact. Do we know the alternative explanations? Yes, because the Literature Review (LR) acquainted us with the scholarship. Now you can see that your conceptual research was not simply an exercise in intellectual history. The LR is enormously useful to us for identifying the other potential factors that could exert influence on the outcome. In our study, we must try to isolate the importance of our preferred cause. The literature told us that smoking increases the risk for heart attacks, while being a vegetarian reduces it. Even though our goal is dampening the risk, we don't want our patients to stop eating meat. Why? If they become vegetarians while taking part in our research, then we can't tell which factor—exercise or diet—affects their heart attack risk. So in the medical study, everyone would be prevented from smoking and from becoming a vegetarian (or doing any other things we know affect the risk for a heart attack) so that we could be sure that exercise is responsible for the medical outcomes we see.
3. Embedded in the third point about risk level are a few insights. When selecting incidents to study, each case must be similar on the most important issues. (For the medical example, that means all participants are at risk for heart attacks and, as we saw in point 2, that they are behaving similarly to manage their conditions.) In addition, we need to know what heart attack risk we would expect from this group. Thus, when we put our cases into a group, we would have some knowledge

that all people with these characteristics exhibit the risk for having a heart attack and more precisely, for instance, that 25 percent of people with their characteristics will have another incident within three years. That “25 percent in three years” gives us a benchmark against which to measure the effects of different forms of exercise. In our experiment, we would divide the participants into three: a first group doing nothing (the *control*), a second exercising moderately every day, and a third exercising vigorously three times a week. This dispersal allows us to know whether (1) exercise makes a difference at all and (2) vigorous exercise (less often) is better.

4. Finally, in this example, we make people do something, or we create the change in the value of the independent variable that we think will have an impact on the dependent variable. In addition to stressing that we are looking here to see exactly what different values of our key factor do to our outcome, the last point highlights a key difference between medical and political science research. People choose to be involved in medical trials, and they then typically do what doctors ask of them.⁵ In political science, a true experiment—wherein the researcher can affect how much of the cause the experimental group receives—is rarer. Perhaps most commonly, we see focus groups around election time in which a group of citizens are brought together to watch a debate. Before and after, they are asked about their political attitudes in general as well as with respect to these candidates. In so doing, those holding the focus group are conducting an experiment. They are seeking to learn what effects the debate had on the attitudes of the focus group members. But usually, political scientists can’t influence variable values and then watch how the experiment unfolds.

Thus, this familiar scientific process—that of medical trials—highlights what you seek in evaluating your thesis. Your job is not to find out that you are right. You choose the universe or a set of cases that are appropriately similar and try to isolate the factor in which you’re interested. In particular, you want to keep other potential causes, those that other scholars have said are important, from having an impact. You also need to see what different values of your key factor lead to. Do they result in changes in the value of the dependent variable as hypothesized? For Kevin, then, do higher levels of media access lead to more citizen activism and more governments falling? For Gabriela, has the party-election system really changed and caused the increase in polarization? Now that we have a better understanding of the overall idea here—that we’re trying to figure out whether our preferred factors are really most important in affecting outcomes—let us leave the medical analogy behind and turn to the challenge of designing a project in political science.

WRITING THE RESEARCH DESIGN

When you approach the Research Design, your starting points are your model and your hypothesis. You can't make any progress without them, and at this point, you are focusing on them with laserlike intensity. As you move through the RD, you use the Model and Hypothesis (M&H) section to determine your test. The model identifies beyond a doubt what the concepts are, and the hypothesis tells you what the relationships between those parts are. Does your idea represent what we observe? That's what your research is trying to uncover and study. In planning your study, you have multiple tasks to accomplish in the RD, but the actual text will be relatively short because you are not actually enacting your plan here, just laying it out and defending it. The thinking and the time involved, however, are significant. So be sure that you devote the effort required and handle this section in its parts and in sequence. A poorly designed study can lead to worthless results. An appropriate analogy to the medical example is that if you allow some people to smoke, or you're not sure that all participants are exercising as they should, then you cannot tell whether vigorous exercise is better or not.

CHOOSING CASES

For some students, the Research Question itself identifies cases, and these instances are likely related to a person's enthusiasm for the project as well as to the puzzling nature of the query. Such questions might include the following:

- Why is U.S. politics apparently so much more polarized now than it was in the early 1980s, when similar big questions about the budget, the role of government, and foreign policy were at stake and government was also divided?
- Why was Congress able to pass immigration legislation in 2008 but not 2014, when in both cases control of the body was also divided between the two parties, the president was weakened, and an upcoming election was going to be hard fought?
- Why did Egypt have a strong uprising that toppled the government in 2011, but Algeria (which had experienced much upheaval in the 1990s) appeared unusually (relative to other states in the Middle East and North Africa [MENA]) immune to the turmoil?
- Why did Russia intervene in Ukraine in 2014 but not in 2004?

Each of these questions includes its respective cases: in the first two instances, the cases are periods of time—the early 1980s versus now and 2008 versus 2014—and in the second two they include countries or places and periods of time—Egypt and Algeria in 2011 and Russia and Ukraine in 2014 as

opposed to 2004. These questions were inspired by puzzles the researchers instinctively saw. Remember that puzzles here mean cases that don't turn out as we would expect given our knowledge or, in these instances, cases that seem similar in many ways yet have surprisingly different outcomes. Instinct (and some knowledge about relevant history) told students that these were puzzling cases to study together, but in the case selection section, you want to make sure that you really have picked instances that will make a good test for your hypothesis, not just two cases you know about or two cases everyone seems to discuss. So what criteria help you confirm that your puzzling pair is a good sample (subset) of the possible instances? The watchwords are *variation* and *control*. I start with the concept of variation because students typically have an easier time understanding it. Variation means that there is some difference in your cases; you do not want to pick instances that turn out the same. Instead you want to evaluate different levels or types (depending on whether you have continuous or discrete variables) of outcomes. In the student questions and the proposed cases above, we can see that variation, with the focus in these questions on the dependent variable as shown in Table 7.1.

Table 7.1 Understanding Variation by Looking at Questions with Built-in Puzzles

Question/Hypothesis	Variable (from Model)	Varied Values (Presumed in Question)
Why is U.S. politics apparently so much more polarized now than it was in the early 1980s, when similar big questions about the budget, the role of government, and foreign policy were at stake and government was also divided? <i>Certain party and electoral institutions are linked to higher levels of polarization.</i>	Level of polarization	Higher today Lower in the 1980s
Why was the uprising in Egypt able to topple its government in 2011, but Algeria (which had experienced much upheaval in the 1990s) was relatively immune to the turmoil? <i>Greater access to free media made the toppling of governments more likely.</i>	Likelihood of toppling the regime	Very likely in Egypt Very unlikely in Algeria
Why did Russia intervene in Ukraine in 2014 but not in 2004? <i>The more the balance of power favors Russia, the more likely Russia is to intervene in former Soviet states.</i>	Russian intervention in Ukraine	Intervention occurred 2014 No intervention in 2004

Now any paper writer can determine whether the variable values are actually different across the cases, and this exercise also encourages writers to think again about both how they have stated their variables and whether they are appropriately continuous or discrete variables. Notice that with the last question, Max has moved to thinking not in terms of likelihood (as he did in his Model and Hypothesis section), which is continuous, but now is thinking about a category variable—intervention versus no intervention. Perhaps better still for Max might be intensity or type of intervention, as a quick look into the cases would tell him that yes, Russia was trying to exert influence in Ukraine in 2004, but not to the extent that it did in 2014. Again, we can see how our forward movement often causes refinement and improvements, and thus we move forward while also spiraling back.

In addition to verifying that you have actual instances of variation, you must also be sure that comparing these cases makes sense; in other words (thinking back to our medical case), you're not comparing vegetarians, smokers, and those who have little risk for heart attacks in the same sample. Your sample, then, must exhibit control, whereby you are doing your best to minimize the effects of other factors *scholars have told you could also be important* (but you think are not as essential as your key concept). How do you know what to control for? Your Literature Review tells you, because it identified the alternative explanations. So, the goal in controlling is to try to keep those other possible causes as constant as you can, so that one of those experts who prefers a different explanation can't say, "Well, my factor is really what is important, not yours!" Think of it this way: if in the medical example, all of your moderate exercisers also became vegetarians, how could you tell whether exercise or diet caused the outcome you saw? You can't be sure, so doctors try to control diet (and anything else that might matter) but vary exercise. Similarly, your goal in selecting your cases is to do the best you can to control other factors.

Table 7.2 then allows us to verify that our puzzling questions provide us with some control or certainty that we are comparing instances that are actually similar and will give us useful information about the effects of our independent variable. Here you see the value of the Literature Review: you know what other authors have said is important and how they might criticize your research if you're not careful. For Gabriela, she'll earn disdain if she hasn't kept constant across her cases the levels of citizen engagement, social capital, and elite polarization. Kevin has even more competing factors to think about, and

Max needs to think about two alternatives. Our authors don't simply say in their heads, yes, I've got control; when they write up this section, they will defend their case selection by explaining why and how their samples (the cases they have chosen) help minimize the effects of other possible causes, while allowing them to look at variation.

Above, I simply told you that you want your cases to vary, but I didn't defend or explain that criterion. The reason is that in social science, we want you to explore not only similar instances (for Gabriela, high levels of

Table 7.2 Understanding “Good” Samples by Considering Variation and Control (in Two Steps)

Dependent Variable	Varied Value	Step 1 to Control: Remember What the Alternative Independent Variables Are	Step 2 to Control: Find Two Cases That Vary Also on the Independent Variable but Hold the Value of the Alternative Factor Almost Constant across the Cases
Level of polarization	Higher today Lower in the 1980s	Citizen engagement Social capital Elite polarization	With these cases (today and the 1980s), do you apparently have <i>different party and electoral systems</i> but similar levels of citizen engagement, social capital, and elite polarization?
Likelihood of toppling the regime	Very likely in Egypt Very unlikely in Algeria	Distribution of power in the international system Domestic social structure/socioeconomic conditions Effective society and political elites who negotiate pacts Activist citizens Domestic structures	With these cases (countries), do you apparently have <i>different levels of media access and activism</i> but similar levels in Egypt and Algeria of each of the other factors?
Intensity of Russian intervention in Ukraine	Very intense (violated sovereignty) in 2014 Less intense (economic and diplomatic pressure) in 2004	Russian domestic politics/institutions (liberalism) Russia identity/main foreign policy ideas (constructivism)	With these cases (2014 and 2004), do you apparently have <i>differences in the balance of power</i> but similar domestic political institutions and identity and ideas in Russia?

polarization; for Kevin, strong uprisings; and for Max, times of intervention) but also the opposite or a very different level or intensity of your outcome. The idea is that your explanation should account for the various extremes or at different values of the dependent variable, and the hope is that being able to cover these differences means that you have better reflected the set of instances and truly understood how your concept in question works. So, Kevin would not have a good sample if he chose Egypt and Tunisia, because they both had uprisings; neither would a comparison between Egypt and Saudi Arabia be good,

because even though one had a strong uprising and the other didn't, the socio-economic structure of Saudi Arabia is so different from that of Egypt that those who focus on socioeconomics would not be convinced by Kevin's research. Kevin wants to disarm the skeptics before they have a chance to disagree with him, so he will pick cases keeping the alternative factors as constant across them as he can. We can see Gabriela struggling with finding the appropriate variation and control, too. When the institutions were most different, so too were the alternative factors. She believes that she can defend her choice to compare the 1980s and the 2010s because the changes in the competing variables were relatively small, but polarization certainly increased, as did the nature of party and election systems. You might find that your first attempt to pick cases is difficult, because you just don't know enough about your phenomenon. That's why this case selection phase takes time, reading some basic history, identifying key information, and making some choices. This is the time when your data search is very targeted and focused on finding the "facts" (or, in other words, the "values" of the competing independent variable for your case). You may also use Google searches or even an encyclopedia to find basic information. As always, be sure that your source is a reliable one; for instance, you may use public opinion data from the Gallup organization or national gross domestic product (GDP) per capita according to the World Bank. And for that basic historical or case-based information, realize that you may not rely on or cite the encyclopedia later on.

As we have also seen, not all questions have built-in cases, and if you have chosen such a question, you then need to take special care either to decide to examine the universe or to choose your sample so that you are including both variation and control. Regardless of whether your contentious statements are causal, correlational, or assertions of fact, you need to plan your project carefully. Going back to our students' original insights, including Zoe's interest in gender and representation, we can find some highly general questions that are great ones, but that require thought for case selection:

- Why is U.S. politics apparently so much more polarized today than in previous periods?
- Why did the Arab spring occur where and how it did in 2011?
- Why does postcommunist Russia intervene when and where it does?
- Why do legislators vote on women's issues as they do?

The first option is to consider whether you should study the universe of cases, in other words, all the relevant instances of your subject. To make this decision, you need to identify the universe (figure out exactly what all the cases would be), consider your resources (do you have the time to perform the analysis on all the cases, and will you have access to sufficient information?), and determine whether this is the type of research you want to do. In many instances, the universe is very large, and so studying every case means that you

will be converting the relevant data into numerical information and performing a statistical study. For many students, using their math skills in political science seems fun, and they enjoy this challenge. Others, for various reasons, are more attracted to writing case studies and performing qualitative analysis. While the ultimate decision of precisely how you will perform the analysis can come a little later, this is a situation in which you can see what I meant above about how the different choices you make in the Research Design are interrelated and aren't made linearly. For instance, if you want to do quantitative analysis, now you must pick a large set of cases or the universe.

One advantage to examining the universe is that no one can criticize you for improper sampling, because you aren't choosing—you're looking at everything. They may fault you, however, if you miss an instance, so you want to be very careful to have the complete set. For our general questions above, identifying (and examining) the universe is easiest for Kevin's general question, as he can find an agreed-upon set of MENA countries. For the others, might Gabriela want to examine every presidential election year? Every even-numbered year? Every year? Max will have the difficulty of not only finding the times when Russia intervened intensely, but when it applied subtle pressure or even chose not to intervene at all. Finding the times when the "dog didn't bark" (and Russia didn't intervene, though the situation was potentially ripe) is very hard and very controversial. Then there's Zoe, whom we haven't discussed in a while, who is interested in women's legislation and needs to choose cases too. For at least the past hundred years, Congress has been considering women's issues bills. Does she want to look at all the legislation in every Congress over decades? Not likely, and thus Zoe, like Gabriela and Max, will sample. When you face this decision, please consider examining the universe and then make a very careful decision about your sample. As you can see, when you sample,

you often change the question slightly to make it more specific (e.g., not why the United States is more polarized now than ever before, but why the 2010s are more polarized than the 1980s). The general question will still have inspired you, but you will focus on a set of cases that provides you with variation and control, as we saw above.

Before we leave the issue of sampling, I want to stress the importance of being careful if you decide to choose a subset rather than to examine the universe. The goal in case selection is to find cases that adequately reflect the whole population (variation) and introduce as little sampling bias as possible (control). In other words, we do not want to pick cases we know will confirm our hypothesis and/or discredit challengers. We need a fair evaluation of the contention. A simple example from polling may help illuminate the bias problem in case selection and why we must be careful to avoid it.

Imagine that you were a strong Republican and you were unhappy with some of the polling data reported in the news in late October 2012. You decided to investigate on your own who was likely to win the upcoming presidential election. To figure that out, you went to your home state, Oklahoma,

and traveled around asking the following question of registered voters: “For whom are you going to vote on election day, Mitt Romney, Barack Obama, or someone else?” You would have concluded from your research that Mitt Romney would win the election in a landslide, and your research would have been terribly flawed. Why? You made a major sampling error. By questioning people in a state that is strongly Republican, you skewed your results. Your Literature Review that examined American voting behavior should have made you aware that geography, region, and party affiliation are important predictors of votes. Thus, your sample needed to include cases (voters) in the proportion in which you would expect to find them in the likely voting population as a whole. To survey only Oklahomans would have a poor effect on your findings, because they are far more Republican than the national average. If you were interested, on the other hand, in understanding who was going to win that state’s electoral votes in November 2012, your sample would have been a decent one.⁶

This scenario underlines a point we saw in the medical example: the Literature Review (with both your conclusion and the arguments you left behind) explicitly assists you in deciding which are good cases. Through your analysis of the scholarly answers to your question, you know which other items could affect the outcome. You think they are wrong, but you want to be sure (as in the exercise-heart attack example) that these other factors don’t exert too much influence on your results. Therefore, you try to isolate the effect of your

preferred cause—your independent variable—and limit or preferably eliminate the impacts of the others (e.g., smoking or a dietary change in our medical example). To do that, you typically need to *control* for other factors. When you control, you are holding these other elements constant or reducing their impact on the outcome as much as possible.

In addition, this idea of control means that you should not seek cases that are “good” only for “proving” your hypothesis. In fact, expunge the words *proof* and *prove* from your vocabulary for the duration of the research project. That’s so important (and students ignore it so often) that I’m going to repeat it: *the point of any investigation is not to prove but to learn*. Would we be well served if medical researchers always found that their insights were correct? No. We want to know under which conditions their proposed solutions, be they exercise, drugs, or other procedures, appear to work; when they are ineffective or are harmful; and when the researchers aren’t sure. The goal of your work, like that of medical researchers, is to design a reasonable test of your argument and to report accurately what you find. Your initial ideas do not have to be right; your job here is to evaluate and investigate fairly. In this way, you learn more about the phenomenon in which you’re interested.

So in the preceding example about voting behavior, you can see that you have not controlled for party affiliation, region, race, and ethnicity. To do so, you would need to talk to a *representative sample* of likely voters: in other words, a subset that accurately reflects the universe of cases. Professional

pollsters take great pains to define their samples and have found ways to choose only about 3,000 American voters and arrive at a good estimate of voting behavior. Note, however, that even those professionals typically identify a sampling error of plus or minus 3 percent. With a sample, it is impossible to predict perfectly, but with care you can get very close.

For other kinds of questions, you might need to control for some larger background factor that reflects changes occurring over historical periods. For instance, in examining many different kinds of questions in American politics, comparing pre- and post-1932 doesn't make sense, because the size and role of the federal government expanded after the New Deal. Similarly, in investigating questions of foreign policy or world politics, you might not find cases that occurred during the cold war to be comparable with those between 1990 and 2001, or after September 11, 2001. Those historical periods reflect major differences in the structure of the international system, and you might want to keep that factor—the structure—out of your study by holding it constant, that is, picking all your cases from only one of those three periods (the cold war, 1990 to 2001, or post-9/11).

Some kinds of questions lead to the examination of a great many cases, or what political scientists like to call "large-*N*" (for number of cases) studies. Large-*N* studies are conducive to performing statistical analyses of the data. If you have easy access to data in numerical form, using many cases helps improve accuracy. (As pollsters' work shows, you do not need to use the universe to obtain useful results, but you need to sample appropriately.) Other questions, however, particularly ones that involve examining particular historical phenomena, will not be evaluated in the same way. Usually those researchers choose a small number of cases, but not just one, to evaluate their hypotheses.⁷

In sum, when selecting cases for your study, keep in mind the following issues. First consider the universe and the feasibility of defining it and investigating it fully. If the full study appears to be too much, seek at least two comparative cases. When you select instances, you are not trying to *prove* your thesis. In fact, you need to eliminate that word from your vocabulary. You are seeking to give your thesis a fair evaluation, so you want to be careful not to introduce bias into your sampling procedure. When we sample fairly, we need to be aware of (and take into consideration) the alternative explanations. Our goal is to pick cases that hold the values of those competing factors constant (provide control) while varying the value of our preferred cause or outcome. We are trying to determine whether our favorite explanation accounts for the results.

In the real world, we find that sometimes our understanding of the literature isn't as clear as it should be when we initially make our case selection decisions. Then, at the analysis and assessment stage, we go out, gather data, start thinking about it, and realize, "Oh no! From the perspective of evaluating my thesis, I have not proceeded as I should have. I have not, for instance,

“~~variables~~ are ~~variables~~ for a ~~comparing~~ ~~case~~ or ~~capturing~~ ~~through~~ ~~variation~~ in my variables.” If this happens to you, realize that you are not alone. Frequently, case selections are imperfect; then, however, you have to decide (here, often, in consultation with your instructor) how to proceed. If you still have the time to redo data collection, you may have to rethink the case selection and go back to the beginning in finding your information. For semester-long projects, however, students usually don’t have this kind of time. If there is no justification or no time for fixing, then you have to admit the mistakes and consider their implications in the Conclusion. Thus, be very careful with your case selection and listen to the advice of your instructor. If she or he is skeptical of a pairing or sample you have chosen, hear out those criticisms and adjust accordingly. You should remember, however, that selecting cases perfectly is typically impossible. So do the best you can to have variation and control, and recognize explicitly the limits and problems with your cases. Then, move on to your next task, returning to think about these weaknesses when you write the Conclusion.

CONCEPT DELINEATION AND MEASUREMENT: OPERATIONAL DEFINITIONS AND OPERATIONALIZATION

The second job in the Research Design is creating operational definitions for the concepts and then determining a plan for translating them into identifiable entities and specifying their values, that is, *operationalizing* them. In political science, some values are easily knowable, such as per capita GDP, voter participation rates, or the percentage of women elected to a legislature, but others, like the level of polarization, the likelihood that a regime will fall, or the intensity of foreign intervention, require a good deal of thought.

All researchers use great care with concept definition and the translation of factors into actual variables. When we set out our models in chapter 5, we were technically identifying the major ideas we believed were related to each other. To make them true variables, we transform the theoretical concepts into actual measures. Where does any researcher—whether assessing a thesis or a model—find guides to specifying and measuring concepts? One of the best sources is other authors who have investigated similar questions or concepts; you may use their definitions and measurement strategies as long as you give them credit. The advice here is *not* to take their data or to replicate exactly their studies. I am suggesting that you *base your approach* on other works. To find these *strategies*, go back to the authors you identified in your Literature Review and look at what they did—What choices did they make when conceiving of their variables? What kinds of methods did they employ to measure them? Pick

from among the approaches, and explicitly defend all of the choices that you make by explaining them in your text.

There is often a problem, however, with using existing work as your sole guide to specifying and operationalizing your concepts: established scholars may have access to far more resources (e.g., time, money, research assistance,

information) than you do. One of my favorite scholarly (as opposed to student) examples to use is Robert Putnam's *Making Democracy Work*. Putnam's study, however, took about two decades, involved many research assistants, and required a number of large grants to complete. Thus, he was able to develop measures for variables that used multiple indicators (building blocks for determining his final value for the concept), required interviews of legions of local officials in Italy, and consisted of many statistical sources. If you were interested in probing the importance of culture versus economic development in explaining the efficacy of democracy in different regions of the United States, you might take Putnam's work as an inspiration, but you certainly could not strictly apply his approaches to measuring variables.⁸ You would have to modify the strategies to make them doable, yet logically sustainable, given your time and research constraints.

Sometimes, if you have consulted purely theoretical articles in your Literature Review to help you answer your general question, you will be able to write an excellent section on the theoretical debate, but these articles will be a poor guide at the Research Design stage. In this case, you might look for more applied studies to help. Compare the ways others have defined and measured concepts, and pick one out of the new set that you find best, while being sure to credit your source. Or if you feel confident that translating the concepts into knowable entities is relatively straightforward, you can advance a plan based on your own logic.

When Kevin got to this stage in his research paper, he was struggling with both his question and his favorite school of thought again. Did he want to focus on the puzzle of Egypt versus Algeria, or did he want a global look at why uprisings succeeded or not in the MENA countries in 2011? Some of this change of heart resulted from his attraction to performing statistical analysis and having an independent variable that would be much more manageable to operationalize. His experience with case selection made him think about how important socioeconomic factors might have been in determining where the stronger uprisings were, and he was thinking, "If I were only exploring the relationship between general quality of life and the success of revolution." He knew from previous classes that the Human Development Index is a good measure of quality of life, he thought he could plan a strategy for operationalizing the likelihood of a revolution's succeeding, and he thought it might be fun to explore the whole region at once. So, he had a dilemma. Should he go back and redo the earlier sections and move forward on this socioeconomic school, or should he power forward with his original model and hypothesis and the

case-study approach? As I told him, the choice was his, as I didn't think that the changes necessary to pursue this different school would require that much effort. The key questions were, what did he really want to study, and what kind of investigation did he want to perform? Research is about both satisfying your instructor's guidelines and your passion, and you should pursue what seems most appropriately intriguing in order to have a successful experience. If you

are faced with a similar dilemma, you should also consult your faculty member about whether you should change your direction.

Let's give Kevin some time to think and look at examples of operationalizing concepts from another empirical paper. I'd like to examine one model-and-hypothesis pair from Zoe, who was wondering whether a critical mass of female legislators better accounts for female-enabling legislation or if a certain type of legislator (willing to engage in critical action) was a better predictor of woman-sensitive bills.

Critical Mass of Legislators

Relative Size of Female Group within the Legislative Body	→	Number of Bills Offered That Improve Women's Lot (Women's Issues Bills)
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When a certain, critical mass of female legislators is reached within the body, the number of women's issues bills will increase greatly. Without that critical mass, the number of women's issues bills will be low or nonexistent.

In this model-and-hypothesis pair, we can easily identify two key concepts whose values Zoe needs to know: the relative size of the female group in the legislature and the number of women's bills. Now, how to determine them? Of course, your case selection affects this question, and earlier, Zoe decided to focus on the Senate because she had found an excellent existing study of a similar question by Michele Swers, *The Difference Women Make*. Because Swers focused on the House of Representatives, Zoe thought she could borrow from

Swers's method, but look at Senate cases in order to do her own, original investigation. Zoe also chose to examine more cases (five Senate sessions) than Swers (still manageable, because the Senate is smaller), and all were from the recent past, with one from the period prior to "The Year of the Woman" in 1992. Since 1992, more women have been elected, and Zoe would examine four such contemporary cases, with the percentage of women ranging from 2 percent at the beginning to 17 percent at the end.⁹ Thus, the proportion of women in the legislature served as the value of her independent variable. Her operationalization scheme then was to find the number of women in the Senate during that Congress and divide by the total (100 senators). For the dependent variable, she had to determine the number of women's issues bills offered, and she decided for the sake of proportionality to calculate the percentage of these relative to all bills. That sounds easy, but perhaps tedious, right? But wait—do

you think there's some organization or clearinghouse that decides "this is a women's issue bill?" No, Zoe had to define which bills were relevant to her (so finding potential cases was not a simple matter). In this excerpt, she provides her operational definition:

For my data, the best definition is one that Childs and Krook (2008) propose. Under their parameters, women's issue bills "capture a broader range of issues affecting women's everyday lives" (p. 133). It is important to keep a part of the original definition because women are still closely connected to children and their families. Bills focused on child or family issues would certainly have an effect on the lives of women. Most obviously, bills that affect women's work or home environments directly also would be included.

She continued by explaining that not all health insurance bills would be tagged "women's issues," even though the public generally thinks of health care as a women's issue. To maintain her focus and the accuracy of her measure, Zoe includes all bills with "direct consequences for the well-being of women and children." Now this definition helps her know what she will include, but it doesn't explain how she will determine them. Here, again, she must explain. Ultimately, she went through the *Congressional Record* and evaluated every bill introduced for a particular session and determined whether the bill had "direct consequences." As you can see here, Zoe would be well served to establish some criteria that would help her easily categorize bills (and defend her from charges of bias).

Turning back to Kevin, he realizes that this is decision time. He must make a choice about which model-hypothesis pair he wants to pursue, the one he

~~"choice about which theory/variables pair he wants to pursue, the one he~~ recently started to consider—the wealthier the MENA country, the less strong would be the uprising—or his original one—the greater the media influence, the more likely the regime will fall. Ultimately, he decided to pursue his first idea, because the media were what inspired his work. Now, Kevin recognizes that he has to find operational definitions and strategies for knowing the values of his variables: level of media influence and the likelihood that the regime will fall. This pair contains one relatively easy concept to operationalize (level of media influence) and another that is more difficult (likelihood). For media access, memories of poking around on the Freedom House Web site for his Introduction to Comparative Politics course made him think that he could find some information there on media freedom, and a Google search helped him find some statistics on social media use in MENA countries. Thus, Kevin realized that he would use at least two indicators to capture the level of media access, because he was interested in old and new media. But would this be

enough to find the value of media access? The outcome presented more of a challenge: how was he going to determine likelihoods? That had been a nice concept, but nowhere were there agreed-upon probability estimates. Thus, after some thinking, Kevin realized that he would have to make an assertion and use a proxy (or stand-in) variable for this concept. Recalling his earlier line of reasoning, he remembered that for him, activism seemed to account for revolution—where there were a lot of people out in the streets and their commitment was intense, uprisings succeeded. As he thought more, part of what he was claiming was that the opposition becomes very broad based and strong, so that even members of the regime, like the military for instance, turn against the leadership. Thus, Kevin would operationalize the likelihood of toppling the government by evaluating the number of activists, their intensity, and their overall societal support, assuming that as these were all greater, the pressure would mount and the regime would fold. Thus, the likelihood would be higher.

As you can plainly see, operationalizing involves important decisions for the variables, which can have a huge impact on the study. When translating concepts into variables, be very careful that the measures are both *valid* and *reliable*. Validity means that the strategy for knowing measures' values provides accurate representations of the concepts (or at least as accurate as possible). Zoe worked very hard to capture the true meaning of "women's issues bills," so as to include only those bills that truly affect women and children (as women are still more likely to have primary responsibilities for children). Similarly, Kevin has to think about what will best represent his concepts, particularly the likelihood of the toppling a regime. For him, this will ultimately be a three-part ~~measure that he will combine to estimate likelihood~~

There's a second issue involved in knowing your value, called *reliability*, or the ability to repeatedly achieve the same measure—regardless of who is doing the evaluating. When you're choosing from a list of data, as with determining the percentage of women in the Senate at any one time, all you need to do is find the number and do the division. Unless your eye skips incorrectly across the column, the reliability of your value is very high because you have captured the proportion of female senators. However, when your measure entails judgment, it might be more subject to problems. Zoe doesn't know what proportion of female legislators is the "critical mass," and she is going forward thinking that she might discover that magic number. Kevin will be taking data from various sources and then coming up with a composite judgment about whether the various values of cable television access, media openness, and social media penetration are "high," for instance. To convince readers that his strategy is reliable, he needs to be transparent about how he will make his judgment. The goal in defining your strategy is to make it easy for others to perform the same task and get the same value.

If we think of operationalizing as a game of darts, a measure that is both valid and reliable consistently hits the bull's-eye. A measure that is valid but unreliable will scatter around the bull's-eye unpredictably, while a measure that

is reliable but invalid will always land in the same vicinity but never hit the center. Validity means the aim is on target, and reliability means the throws are consistent. The best players (and strategies) are both valid and reliable, helping the research consistently capture the true value of a concept.

IDENTIFYING DATA SOURCES

The third part of the Research Design is to identify which information you are going to use to know the values of your variables and exactly where you are going to get that information. The focus is on finding the data that you need to evaluate your hypothesis. Here is where you seek primary sources, bits of unprocessed information, on which you will rely to know the values of the variable. We have already seen that when operationalizing, our students have had to be aware of data sources. Why? Because a strategy for knowing your values is worthless if the data you hope for don't exist.

When you are identifying your sources, you should not simply take information from any place you can find it. You want to be sure that you have the best source, given your constraints. While Internet searches for data are useful, be a critical consumer. In general, reference librarians will tell you that when you come across a source, you need to interrogate it along five dimensions:

authority, accuracy, coverage, currency, and objectivity.¹⁴ For the first, you want to ask yourself, Who is providing this information? Is it someone or some organization you have a reason to believe is credible and respectable? Here, look not only at the individual's name but at her or his title and institutional affiliation to determine whether this person has authority. Second is accuracy. When considering that factor, you must take the motives of the source into consideration. For instance, during the cold war, the Soviets provided false statistics about their economy, and students of the USSR used instead Central Intelligence Agency (CIA) estimates of that country's economic activity. While the CIA might have had some propaganda motives for underestimating the Soviet economy, it also was charged with gathering information so that the United States would be prepared for threats. Thus, most scholars thought its data were more valid than those released by the Soviet government. If you have some doubts about your source's accuracy, note them and explain why you still think that this source is the best.

Coverage refers to how broad in scope is the information or the site. Is the scope right for your purposes? If you need information from a particular time period, group of states, or candidates, your sources must have the coverage you require. Currency refers to how recent the information is. For historical projects, currency will often not matter. Gabriela, Kevin, and Max all need very current information, and you might too, so be sure to check how recently updated the site or publication is. Finally, you want to consider objectivity. Many organizations have explicit political agendas. Try to avoid taking data from these groups, but rather look for arguably more objective sources such as

government or international agencies or nonpartisan organizations. For instance, you would not want to take all your data about the dangers of smoking from cigarette makers or information about the relevance of class size to student performance from the American Federation of Teachers unless, of course, you were trying to investigate what manufacturers argue about the ill effects of smoking or what union positions are on class size.

You may think that consulting your data sources now, when you are only making your plan for your research, is premature, but it is a crucial step in creating the Research Design section. By looking for data at this point, you make sure that what you hoped you could get—as you defined in your first two subsections—is available for the cases you want to study. In effect, then, specifying your data sources here and checking that they actually have what you need ensures that your wonderful plans for evaluating your argument are actually possible. If you can't get access to the information you require, you might need to modify your earlier strategy, and it's better to know that now rather than later.

We have already seen Kevin struggle with data, as he recognized that

nowhere would he find a measure for “likelihood of uprising success,” and instead he is introducing a *proxy* variable, which is actually the size and intensity of the opposition. Ultimately, he’ll have to defend this as a measure for likelihood and consider any possible weaknesses. What does he lose by focusing on opposition? If you find that an approximation for your preferred factor is not strong enough, you may decide to go back and change the thesis under investigation (in Kevin’s case, access to media → size and intensity of opposition), noting, “The data made me do it!” As long as you explain what you are doing and why (and these points are logical and accurate), you are safe from criticisms on methodological grounds.

STRATEGIES FOR UNCOVERING AND, AT TIMES, CREATING DATA

After you have operationalized your variables, picked your cases, and found your sources, there may be an additional step. There are times when the operationalization of your concepts means that you have to come up with ways for uncovering and, in a sense, generating data. I hesitate to use the word *create* because I do not want any reader to think that you should just make up your information to suit your purposes, but there are times when the information is available, but you have to do more to find it. Perhaps Gabriela decided that she wanted to explore polarization among students on her campus and see whether any of the purported claims about why polarization occurs and whether her peers really were polarized were true. To perform this study, Gabriela will need to design a survey to uncover these data. Similarly, imagine that Zoe wanted to explore a slightly different thesis that was inspired by her earlier reading. She wanted to examine the critical mass versus critical action at the state level in

contemporary politics, but in addition, because her university was in the state capital and had a special state politics program, she wanted to interview legislators to understand their perceptions of the relative importance of mass and action in getting things done. While she knew that perceptions were not the same as reality, she thought that uncovering perceptions might help her understand better what legislators thought really mattered for accomplishing their goals and might give her insight into refining her ideas about representation.

In those cases, the students need to develop surveys or interview questionnaires that will help them amass the relevant information. These are time-consuming but highly rewarding tasks, for many reasons, but one that is particularly appealing to most students is that they are uncovering new information, and therefore, data creation provides an additional sense of excitement and accomplishment. Remember, any time you plan to perform research on human subjects, you need to go through a training program (typically, this is easily accomplished through an online module), submit your Research Design and instrument (survey or questionnaire) to your professor and the institution's research review board, and receive permission. This process takes time, so you want to begin early. And writing a good instrument is very important and requires attention to detail. You want to keep your instrument short (so that your respondents don't get bored or stop taking the questions seriously) and targeted to uncover the information you need. You also must write your questions very carefully, so as not to confuse, mislead, or suggest an answer to any of the participants in the study. Here you must pay close attention to reliability (meaning that neither you nor whoever is administering the instrument is *eliciting* particular answers) as well as validity (the questions you are using to generate information are good translations of the variables in your model). Consult an excellent methodology book and look for examples of similar survey or interview research as you design your instrument.¹¹

In sum, whenever you need to develop a method for generating information, you must explain exactly what you are doing and how you are doing it. In addition, you must set out the logic behind your approach, justifying every decision you made as the best one for accomplishing the task at hand given the resource constraints under which you are operating.

METHODOLOGY

As a last part of the planning process, you should include an explicit discussion of how you plan to put all these pieces together, a discussion of what we might call your methodology. What you actually do is very much dependent on the earlier steps. If you have chosen a large-*N* study with quantitative data, you likely will perform a statistical analysis. At this point, you should inform your reader that you will be performing a particular kind of test, for instance, a chi-squared test or a simple linear regression. Both you and your reader should understand what that means (at least you will by the end of chapter 8).

Alternatively, you could perform a comparative case study, as Kevin (or even Max) will ultimately do. Despite using some numerical information, Kevin is not doing a statistical study to understand why Egypt's regime fell and Algeria's didn't. He will compare what happened to the values of his variables—access to media and likelihood of revolt success (on the basis of his proxy)—leading up to Hosni Mubarak's ouster in February 2011 and the relative quiet in Algeria throughout the period of turmoil.

Finally, you might have a thesis that lends itself to discourse analysis, which asks you to trace the meanings of concepts in the writings or words of key political actors and which behaviors then follow. Had Max decided to pursue an identity- or ideas-based explanation for Russian foreign policy, he might have found discourse analysis a useful tool for understanding why Russia intervened intensely in 2014, but not in 2004. How might this work? As Roxanne Lynn Doty explained in her study of U.S. intervention in the newly sovereign Philippines, the words used produce results. In this case, Americans' views of themselves as noble, well-intentioned protectors; of Filipinos as childlike, gullible decision makers; and of the Soviets as evildoing imperialists compelled the United States to disregard its earlier commitment to the Philippines' independence to intervene. Doty's method was to analyze primary sources, this time U.S. foreign policy documents, to see exactly which language American decision makers used to portray themselves, Filipinos, and the Soviets to come to her findings. Words and terms were her data, and she searched for the linguistic themes, contending that these words then compelled action. Before performing her analysis, Doty set out the types of phrases she would be looking for and what they would mean for her thesis. Then, she went through the government documents and literally counted the incidence of these themes and was able to show which ones were more prevalent. While she did not perform a statistical test, Doty summarized her findings in a table and was able to show where the preponderance of the evidence lay. That allowed her to support her claim that because American policy makers saw their motives as altruistic and protective, had very patronizing views of the Filipinos, and held a menacing perspective of the Soviets and communist activists on that archipelago, U.S. intervention became the only sensible policy, despite America's having given the Philippines its sovereignty a few years before.¹² If Max pursued a constructivist hypothesis, he could use Doty's work as an example and examine the ways in which Russia conceived of itself, its role in world politics in general and in Eurasian (former Soviet states') affairs in particular, and its relationship to Ukraine. Did the language change in ways that might account for the intense intervention in 2014? A discourse analysis would expect that Russia's sense of its importance, place in the world, and need or desire to control Ukraine would be communicated clearly in elite as well as more popular communications and make the later intensive intervention almost automatic when an opportunity, such as political turmoil there, arose.¹³

In conclusion, while all my instructions and analogies might seem reasonable as you are reading through them, actually writing your own design might

still seem difficult. To aid you in your efforts, I offer you a “Designing Your Project” worksheet in the online resources that will be invaluable in planning your research. It reminds you of the medical analogy and walks you through each stage of the RD. This worksheet should be as helpful in completing the RD as writing the Annotated Bibliography was in finishing your Literature Review.

FINISHING TOUCHES ON THE RESEARCH DESIGN

As you turn to writing this section, remember that it should be able to stand alone as an essay yet be integrated into the rest of the text. Consider this the place where you explain exactly how you will conduct your research and why your research strategy will help you answer your question as accurately as possible. Thus, the section answers the query, How should I proceed for the truest assessment of my thesis? It should be set off from the rest of the text with a heading and include introductory and concluding sections. The body of the essay must accomplish the three tasks identified at the start of this chapter.

To name this section, remember that the focus is on communicating what you will do and why. Something like “Planning a Comparative Study of American Polarization” for Gabriela or “How to Explore the Impact of Media on the MENA Uprisings of 2011” for Kevin would be appropriate. Again, the heading both sets off this section from the others and informs the reader of its purpose. In the Research Design, you are performing four or five rather involved tasks—concept definition and operationalization, case selection, data identification, information generation, and a brief discussion of methodology. Because of these many different requirements, you may want to use subheadings here if some parts are particularly long, but you’ll notice that Kevin was able to complete this section successfully without them. Still, he has signal words in the text so that a reader can tell precisely which task he is fulfilling at any given time.

How to Explore the Impact of Media on the MENA Uprisings of 2011

Access to old and new media among citizens of the Middle East enabled the uprisings of 2011, and in fact, the greater the access to media, the more likely did the revolt succeed in ousting the longtime leader. To test that relationship, I will perform a *comparative case study* of Egypt and Algeria in the years prior to and including 2011. These instances provide *variation* in the dependent variable, as Egypt successfully removed its leader after a massive uprising, and Algeria remained rather quiet and its regime stayed

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in place. This pairing, then, allows me to investigate the extremes in pressure on the regime and its fall. By *choosing these cases*, I am also able to *control* for factors that other scholars deem important, such as the international system, socioeconomic conditions, and domestic structures. Regarding the international system, I am examining both states at the same time, so they are confronting the same arena. In terms of economic conditions, while their situations are not precisely the same, they are closely similar on many important factors. Egypt and Algeria are relatively poor and suffer from similar levels of unemployment, have rentier states with great involvement in the economy, and are ethnically homogenous. In terms of domestic structure, both are regimes where the military dominates, although some may argue that in recent decades, the Mubarak regime has become more personalist than has the Algerian one. Still, if that were the case, this difference in domestic structure would mean that Egypt would be less likely than Algeria to have a successful revolt, which is clearly not supported by the data.

Perhaps some areas of concern in terms of control relate to the role of elites (societal and regime) in negotiating the outcome or in the role of activists in each case. As I have pursued my research, I see that my argument about the role of media subsumes within it the importance of elites' and citizens' mobilizing and working toward the collapse of the regime. At times, success will require societal and regime elites (such as the military) to cooperate, and will mean that people take to the streets in protest. Thus, my argument requires and incorporates the importance of these factors, and my case selection, therefore, provides my study with variation (very different outcomes on the dependent variable) and control of alternative explanations, as summarized in Table 7.3.

Regarding *operationalization*, I will capture the causal factor, access to the media (traditional and social), using three indicators: media freedom in the society, the influence of independent (i.e., non-regime-controlled) cable TV, and the availability of new media sources, such as Twitter and Facebook. Freedom House, a well-respected organization that evaluates democracy and liberty around the world, provides a ranking for media freedom on a

1–100 scale, where a score of 1 indicates full media freedom and a score of 100 indicates the least amount of media freedom. To determine the influence of old media, I will look at television ownership, assuming that citizens with TVs have access to independent cable news, as networks such as Al-Jazeera were broadcasting an independent (of the regime) interpretation of politics into the MENA households. Last, the Arab Social Media Report provides information about the use and availability of new media outlets,

Table 7.3 Controlling for Competing Explanations

Variable	Egypt	Algeria
GDP (in billions)	\$525.6	\$267
Unemployment rate	12.2%	10%
GDP PPP	\$6,600	\$7,400
Government role in economy	Highly centralized	Highly centralized
Population	83,688,164	37,367,226
Culture	99.6% Egyptian	99% Algerian
Percentage below poverty line	20%	23%
Percentage of labor force in agriculture	14.5%	14%

Source: CIA *World Factbook*, 2012, <https://www.cia.gov/library/publications/the-world-factbook/geos/eg.html>. Accessed November 15, 2012.

Note: GDP = gross domestic product; PPP = purchasing power parity.

such as Twitter and Facebook, in the relevant countries. It is a product of the research of the Governance and Innovation Program at the Mohammed bin Rashid School of Government. Together these three indicators help me conceive of the level of citizen access to media. My strategy here is both *valid* and *reliable*. Freedom House seeks to quantify the very concept of media freedom, and it is an organization that is respected and performs careful research, so most observers accept its evaluation as unbiased and an accurate representation. Nation Master, the source of TV ownership, is also a

trusted source of basic information. Last, the Arab Social Media Report, although it is funded by Dubai, seeks to capture the penetration of social media in the Arab world. The problem, of course, is that aggregate figures of access do not tell us what channels or sources any individual is experiencing and how often. It also can't tell us, as Lynch (2012) asserts regarding cable news, that this information creates a different identity from, for instance, the regime-produced sources. Thus, in that sense, my measures could have some validity problems. Of course, these data are reliable, because anyone can read the figures from the relevant charts.

Together, these three indicators will give me an estimate of the level of access to media that citizens in Egypt and Algeria had. If the Freedom House ranking is relatively high, TV ownership is broad based, and social

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media use and cell phone ownership are significant, then I can conclude that the population is knowledgeable and connected. If these are low, then I cannot expect that the media would have a significant effect, for a biased official media will not provide citizens with the truth about what is going on in the country, citizens won't have access to broadcasts if they don't have TVs, and similarly, they won't be able to use new media if they are not on the Internet or can't connect via calls, texts, and pictures sent on their mobile phones.

While there is an easy way of conceiving of the dependent variable—did the regime fall or not—here I will look at how the opposition that was produced by the media led to an ouster, seeking to include not only the toppling but also some of the mechanism of why the revolt succeeded or failed. Again, I have a *multi-indicator approach to finding the value of the proxy*, by looking at not only the size and intensity of the demonstrations but also the geographic and social expanse of the opposition's popularity, determining whether it includes supporters around the country and from different types of groups. Together, I will assess whether the strength was great (large and frequent demonstrations, growing geographic and social expanse) or small (sparsely attended and few demonstrations with limited geographic and social appeal). This measure is also *valid and reliable* because I will use

news reports of crowd estimates and locations for demonstrations, as well as accounts of the negotiations and agreements between different groups participating. Of course, greater accuracy will have to wait for historians to dig up more information, but this approach to knowing the pressure that brought about the government's fall is adequate for now.

In each comparative case, first Egypt and then Algeria, I will assess the values of the variables as well as look for links between the role of the media and the government's fall. Can I see particular coverage of events or social media requests leading to an increase in the opposition, not only in terms of presence at demonstrations but even discussions between societal and regime elites that show that together they were pressuring the leadership? If that is the case, then I feel confident that a causal connection, not simply a correlation, exists between my proposed independent variable and the fate of the regime.

In sum, this design provides me with a sufficient test of my hypothesis. I have sampled cases that provide both variation (very different outcomes for the leadership) and control (as Egypt and Algeria are relatively similar on the alternative factors), and finding such a pairing is not easy. There are no nearly identical states in the region that experienced the Arab spring in different ways. My strategy for operationalizing the concepts is carefully

Making Your Plan and Protecting Yourself from Criticism

thought out to capture the essence of these factors, depends on information that comes from reliable sources, and is not subject to interpretation. However, I am leaning on news sources, which may be found to be incomplete or inaccurate in the future when scholars have more access to now closed document sources, can perform interviews, and are able to do more thorough information searches. Still, given the importance of these events, doing this preliminary research is useful, particularly because through my comparative case approach, I am seeking not only to uncover correlation but to examine the connections between the variables, investigating whether media access influences what happens on the streets and the kind of pressure that can be brought to bear on a government.

Kevin has done an excellent job on his RD, as it contains each of the required elements (case selection, including a discussion of variation and control; operationalization, with explicit mention of validity—even potential problems—and reliability; sources; and methodology). I have added italics—which you won’t do in your text—so that no one can mistake that he has accomplished all he should. While he is confident of his choices, he does mention some weaknesses. For other projects, in which the cases are less comparable or the data would require more judgment, a writer would have to spend more time on these issues and what effects they might have. But once mentioned, now the student moves forward.¹⁴

A few characteristics of this section are likely also notable to you. First, Kevin uses “I” and other first-person pronouns here, and he does so because I ask students to use direct language rather than the passive voice. Your professor might rather see you avoid “I,” so pay attention to your instructor’s usage preferences. Second, the table about control is not required for everyone, but in this case, Kevin wanted to show any skeptics that these countries were comparable, so including the data helps disarm critics. Whether you need a full table depends on how controversial your case selection is. Also note that Kevin tells us here what he is going to do, but he doesn’t actually go out and begin to find the raw values for his indicators or determine the variable values over the course of the relevant time period. That job of filling in the values and actually analyzing the hypothesis on the basis of the data is the work of the next section, the Analysis and Assessment. He has, however, made sure that the information he hopes for exists, so he knows that his plan is workable. Fourth, Kevin never tells us that he is “proving” his hypothesis. Again, banish that word from your vocabulary throughout this paper. Last, this section is relatively short, but yours might be longer. For instance, if you needed to develop a questionnaire, you would discuss its logic and goals and prepare a draft of it to share (although you would include it as an appendix).

CHAPTER 7

After you have finished the design, you are ready to move forward and perform your research—you know what you need to do, and now the only issue is enacting your plan. At this stage, you should feel happy that you are now heading into what most students see as the best phase of the project—when you have the chance to investigate whether your ideas about your concept of interest are confirmed.

PRACTICAL SUMMARY

The Research Design is the section of the paper in which you provide the plan for your research—how to choose cases, define and operationalize concepts, identify information sources, generate data (at times), and explain your methodology. Typically, you cannot define or conduct a true experiment to evaluate your hypothesis, so you have to make well-informed choices about how to proceed. As long as you are aware of the concerns about methods—minimizing bias, controlling for other explanations, choosing cases that maximize variance in either the dependent or the independent variable—you can come up with a good plan. Such a program, however, is likely not to be perfect, so you must be explicit about the possible imperfections and their effects on your research. After you admit them as possible weaknesses and defend them as acceptable compromises, you move on, because conducting perfect social science research is nearly impossible. You will return to consider how the design choices might have affected your analysis in the concluding section of the research paper.

RECIPE 6: RESEARCH DESIGN

INGREDIENTS

- Your Model and Hypothesis section
- Your Research Question
- The “Designing Your Project” worksheet (download a copy)
- Your Literature Review
- Access to Kevin’s Research Design example
- Access to all of chapter 7

INSTRUCTIONS

1. Download the “Designing Your Project” handout with the goal of filling it out.
2. Return to the conclusion of your Literature Review, and look closely at which school of thought you believed was the most important. Look carefully at your model and think to yourself, Have I come up with the best pairing? Do

I need to make any changes to either one? If you are pleased, copy and past

your hypothesis into the spot on the handout for the hypothesis. Otherwise, make the necessary changes and type in the hypothesis.

3. Then, copy and paste your question into the appropriate slot. Turn to the case selection section of the worksheet. Try to identify the universe of cases. If you have already defined your cases, double-check that they provide variation (the outcomes are different) and control (hold other factors constant). If not, think through the case selection criteria. Perhaps you can keep one of your cases? Mimic the processes of Gabriela and Kevin provided for you in this chapter as you proceed and fill in the table to help you think through the specifics of your case selection and justification. As you consider sampling, also consider what type of research (comparative cases, statistical analysis, discourse analysis) might be required and whether you would find it appealing. Those judgments should also enter into your selection decision. If you are sampling:

- a. *To find cases that include variation*, you want to find instances of your phenomenon (for Gabriela, polarization; for Kevin, MENA revolt in 2011; for Max, Russian intervention; and for Zoe, women's issues legislation) in which the outcomes are different (higher or lower polarization, strong revolt or little revolt, intense intervention or less intense intervention, more women in the Senate or few women in the Senate). Here you need to consider whether you want to compare different time periods (like Gabriela or Max) in the same country or different places (Kevin) or different legislative sessions (Zoe, which is like different time periods). If you know little about your concept or independent variable, then you need to read up to find out what might be good comparisons that provide very different conditions. What would be a case for you? In medical science, it is an individual who has had a heart attack; for Kevin, it is a MENA country. Try to write down some cases that have different outcomes on your dependent variable.
- b. *To find cases that provide control*, you must determine which cases you are going to study. Go back to your LR and list the alternative factors. While also considering what Gabriela and Kevin did, ask yourself, In the cases I thought gave me variation, are the alternative factors relatively stable? Think through what was happening on each of the alternative factors for your cases. Do a little research if necessary to find out whether those other potential causes stay constant across your possible cases. Eliminate any cases in which the other factors change greatly. Remember you likely won't be able to find

cases with perfect control. Ultimately, pick those that give you the most variation with the most control. Fill out the chart as appropriate. If you are stuck, write down the factors that need control, put

down some possible cases and the issues involved with choosing them, and move on to the next step. Return later.

4. Discuss precisely how you will translate your concepts (independent, intervening, and dependent variables) into knowable entities. Here, turn to the operationalization portion of the worksheet. This is often a multistep process that includes finding an operational definition (i.e., one that helps you think about what your concept means in concrete terms) and then determining the strategy for knowing its value for your cases. If you have seen research that operationalizes concepts similar to yours, use those ideas, but modify them to make them doable. Otherwise, you can think through your issues yourself, as Kevin has done. Remember that you might need a few indicators (parts of the whole concept) that you can look at to understand different pieces, and then you have to find a way of thinking about how these parts fit together. I encourage students to brainstorm first about what they would need to know to capture the concept, writing down everything they can think of. Then, I have them go back and think, which one(s) is (are) truly essential? As a general rule, never use more than three indicators for a concept; otherwise your task becomes too complex. Think about validity and reliability as you operationalize, and discuss why your strategy captures the essence of your concept (is valid) and is reliable (doesn't introduce bias). Also remember, you have to operationalize every variable in your model—dependent, independent, intervening, and dependent. Fill out the table to explain your strategies and make your justification for each concept.

5. As you are working on operationalizing and narrowing down how you will know your variables' values, you will likely have to start looking for sources of information. If you do an Internet search, be sure that any source is reputable, subjecting the site to the five-criteria test. If you cannot get access to the data you wanted, you need to rethink the decisions you made in the first and second subsections. Remember, finding perfect data is next to impossible; make the best of the data you have and admit any weaknesses when you discuss operationalization and data sources in your RD. Go back to your cases. Does your strategy make sense of those cases? Can your work on operationalization help you make better decisions about your cases? Fill in this information in your data chart.

6. For those of you conducting surveys or interviews or using other methods for creating a scale, include a discussion that clearly specifies how you will generate data. If you need to design an interview questionnaire or survey, describe your goals for writing it and any concerns you had in developing the instrument, and include a copy of it. Also, fill out the necessary paperwork and submit this questionnaire to your institution's review board for approval for using human subjects in your research.

7. Finally, already done your thesis chapters if you haven't your argument

8. Complete with a to mimic Kevin through each are not generated, notice potential problems make your project

EXERCISES

1. Determine the following two

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Be sure to

2. Imagine understanding the hypothesis of the MENA conflict analysis method in the don't worry

3. Develop polarizing to determine Gal

4. Develop (or all) about consider developing evaluate a

7. Finally, think about the methodology you will use. Perhaps you have already done this because questions of exactly how you are going to evaluate your thesis came up as you thought about the cases and operationalization. But if you haven't, think explicitly about the steps you will take to evaluate whether your argument holds.

8. Consulting your worksheet and Kevin's example, write your RD, complete with a heading and a concluding paragraph. Again, you should feel free to mimic Kevin's organization and even his style and sentence structure. Move through each of the five tasks, without skipping one (except, of course, if you are not generating data). Be sure to explain and justify your choices. In addition, notice Kevin's conclusion, which specifies his choices and acknowledges potential problems. Like Kevin, you do not perform your research here, just make your plan and justify your decisions in preparation for that next phase.

EXERCISES

1. Determine strategies for selecting cases and operationalizing one of the following two theses:

- In the United States, areas with more highly engaged citizens are more highly polarized.
- The more the imbalance of power favors postcommunist Russia, the more likely Russia will be to intervene in former Soviet states.

Be sure to discuss variation, control, validity, and reliability.

2. Imagine that Kevin decided to study the universe of cases in understanding the Arab spring. How might he now write his Research Design if his hypothesis were "The lower the standard of living, the stronger the revolt in the MENA countries in 2011"? Please note that he would have to perform statistical analysis, most likely a regression of the data. (We will talk more about this method in the next chapter. If you're not sure what to write about method here, don't worry. Do the best you can writing everything else in the RD for now.)

3. Develop a questionnaire for surveying students at your school about polarization. Remember, as you develop the questionnaire, you should be trying to determine whether there are data to evaluate at least one of the arguments Gabriela examined.

4. Develop an interview schedule for talking to elites (local, state, national, or all) about polarization. Identify which types of elites you would survey and consider how your chosen group might affect the questions you ask. Then develop your interview questions, realizing that you are doing so in an effort to evaluate at least one of the arguments Gabriela examined.

NOTES

1. To repeat, the research paper-writing process is iterative. In a marathon, you wouldn't go back and run mile 10 again, but in this endeavor, you might rethink a decision you made earlier. However, you need to be aware that (1) a clock is ticking (you usually have a due date for your paper), and (2) you have made important forward progress. Keep thinking and writing, realizing that as you take new steps, you may have insights you need to incorporate or ideas you need to adjust in older parts of the paper.
2. For detailed and methodologically sensitive discussions of research design, see Donald T. Campbell and Julian C. Stanley, *Experimental and Quasi-experimental Designs for Research* (Boston: Houghton Mifflin, 1963); Janice Buttolph Johnson and H. T. Reynolds, *Political Science Research Methods*, 7th ed. (Washington, DC: CQ Press, 2011); W. Phillips Shively, *The Craft of Political Research*, 7th ed. (Upper Saddle River, NJ: Pearson, 2009), 74–96; and W. Laurence Neuman, *Social Research Methods: Qualitative and Quantitative Methods*, 7th ed. (Upper Saddle River, NJ: Pearson, 2011).
3. Shively, *The Craft of Political Research*, 7th ed., 17.
4. The medical community now generally thinks that daily moderate exercise is better; if I were deciding to proceed with this research (and hoping for external funding), I would have to show a good reason for thinking that this consensus is flawed. My apologies that I have not selected a medical example that reveals awareness of the cutting edge of current research on cardiovascular disease; I do know something about political science, though, and I recommend that you pursue a hypothesis you have good reason to believe (because of your literature review and knowledge of politics) could be correct.
5. Of course, people who are in the position to be in this study might not be thrilled about their choices. They might enroll in the research as a last resort, and they might not enjoy the long (in our example, three years!) commitment or what they have to do. Often, individuals drop out, so researchers have to make sure that sample sizes are large enough to be able to overcome this attrition.
6. It is not, of course, a perfect one. You need to determine whether your participants are likely voters. In 2012, when overall turnout was about 57.5 percent, only about 49 percent of Oklahoma voters cast ballots, with 66.8 percent of them choosing Romney and 33.2 percent selecting Obama. (For election details, see Bipartisan Policy Center, "Detailed Charts: Turnout Charts: Presidential Race," <http://bipartisanpolicy.org/sites/default/files/Turnout%20Detailed%20Charts.pdf>, and "Election 2012: President Map," *The New York Times*, <http://elections.nytimes.com/2012/results/president>, November 29, 2012.) Pollsters have found that if you ask a participant directly whether she or he plans to vote, you are likely to get the answer "yes." Most Americans know that they are supposed to vote to be considered good citizens. So to get at likelihood more accurately, you may want to ask, "For whom are you going to vote?" first and then ask when was the last time your respondent voted. For more on the importance of careful case selection, see Arend Lijphart, "How the Cases You Choose

Determine the Answers You Get,” *Journal of Policy Analysis* 2 (1975): 131–52. Also, Shively noted that the *Literary Digest* made a huge sampling error in 1936 when it polled telephone and car owners on their preferences for president. Taking those who returned their surveys, the publication predicted a defeat for Franklin Delano Roosevelt, who ultimately won convincingly (Shively, *The Craft of Political Research*, 7th ed., 50–51).

7. They may perform a single case study for other purposes, for instance, considering the plausibility of their thesis (plausibility probe) or as a heuristic case study, to determine how multiple perspectives account for what happened. See Alexander L. George and Andrew Bennett, *Case Studies and Theory Development in the Social Sciences* (Cambridge, MA: MIT Press, 2004).
8. Robert D. Putnam, with Robert Leonardi and Raffaella Y. Nanetti, *Making Democracy Work: Civic Traditions in Modern Italy* (Princeton, NJ: Princeton University Press, 1993).
9. Please realize that Zoe was writing a yearlong senior thesis. I could not imagine that a student could complete this detailed analysis, with so many cases, in a semester-long course project.
10. Reference librarians have created these particular terms and helpful ways of assessing sources. See “Evaluating Web Sources,” First-year Seminar Library Modules, Saint Joseph’s University, <http://librarytoolkits.sju.edu/content.php?pid=103334&sid=776924>.
11. Many research methods textbooks provide excellent advice on designing surveys and performing interviews. See, for example, Janet Buttolph Johnson and H. T. Reynolds, with Jason D. Mycoff, *Political Science Research Methods*, 6th ed. (Washington, DC: CQ Press, 2005), 297–350.
12. Roxanne Lynn Doty, “Foreign Policy as Social Construction: A Post-positivist Analysis of U.S. Counterinsurgency Policy in the Philippines,” *International Studies Quarterly* 37, no. 3. (1993): 297–320.
13. In the Web Resources, I have included a version of a student paper that performs a discourse analysis of a pope’s impact on activism in Poland during the communist era.
14. I hope that you can see that Kevin has taken his filled-out Designing Your Project worksheet (available in the online resources) and used it to write this section.