

A Guide to Developing and Writing Research Papers in Political Science

Scott L. Minkoff, Ph.D.

Assistant Professor

Department of Political Science

SUNY New Paltz

minkoffs@newpaltz.edu

www.scottminkoff.com

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I. About this Guide

This guide is intended to help you work through the process of developing and writing a research paper for a political science course. In particular, it is meant to help you with a research paper in *one of my classes*. While my hope is that it will be valuable for other classes that you take in the social sciences, it is important to always be clear about the expectations of your professors as they may be looking for something different.

In the following sections I address a range of topics. After summarizing the six parts of a research paper, I offer some suggestions on how one goes about selecting and refining a research question. I then discuss the development and writing of each of the sections of the research paper and conclude with a section on sourcing. Along the way, I discuss common problems that students face when writing a research paper and offer some suggestions about how to overcome them.

II. The Six Parts of a Research Paper

A research paper in political science typically has 6 parts: (1) Introduction, (2) Literature review, (3) Theory, (4) Research Design, (5) Analysis, and (6) Conclusion/Discussion. While papers vary in their construction, that variation usually finds a way to embrace these 6 parts.

The *Introduction* is where you introduce the research question and, often, the puzzle that motivated you to pursue the question. Introductions should also be previews of what is to come in the paper, including a brief discussion of the research approach and a hint about the conclusions. The *Literature Review* is your opportunity to review the previous scholarly research on related topics and discuss how that previous research informs your own work. In the *Theory* section you develop and describe potential answers to your research question. As will be discussed below, your theory should be logically developed based on previous research and thoughtful assumptions. The *Research Design* section is where you explain how you go about answering your research question in the context of your theory. In the *Analysis* section you present the results of your research in detail—making sure to connect those results to your theory. Finally, your *Discussion/Conclusion* section should serve to review your paper's goals and findings as well as to explicate the paper's contribution to both the empirical literature and our more normative understandings of the political world.

III. Selecting a Research Question

The goal is for you to come up with a research question that puts you in a good position to enjoy the research and writing process but also to be done on time.

A. What is an appropriate research question?

In political science, research questions are aimed helping us to better understand the political world we live in. Answering our questions helps us to explain the phenomena we know as “politics.” The goal of a research question is to formally state what it is that the researcher wants to better understand. Appropriate research questions frequently begin with the words “*what causes...*” You have almost certainly thought about “*what causes...*” questions before even if they were not phrased precisely this way. Consider a few examples.

1. What causes some states to raise their minimum wage?
2. What causes the federal government to put flexible regulatory demands on states rather than inflexible regulatory demands?
3. What causes people to display a campaign yard sign?

Another form of the causal question is the “*what is the effect of...*” question. The “what is the effect of” question is a causal question with a theory (potential answer) baked in. Theory will be discussed in Section V below. Here are a few examples:

1. What is the effect of labor union laws on state minimum wages?
2. What is the effect of partisan control of the states on federal regulatory demands?
3. What is the effect of a person’s proximity to a campaign office on whether they display a campaign yard sign?

Both “*what causes...*” and “*what is the effect of...*” questions are usually acceptable for a political science research paper.

It is imperative that you come up with a research question that is not too broad. Narrower questions are generally easier to research and write about. Rather than asking, “What causes some states to be more gay-friendly than others?” you might ask, “What causes gay rights

activists to pursue the gay rights agenda through the Courts in some states and through the legislature in other states?”

In addition to keeping your question narrow and causal, you also want to keep it empirical. As such, stay away from questions that are normative, opinion-oriented, or simply unanswerable. Normative and opinion-oriented questions focus on whether something “should be” rather than why something is the way it is.

Here are some examples of inappropriate research questions.

Too Broad: What causes countries to go to war?

Too Normative: Should American create a path to citizenship for undocumented workers?

Unanswerable: How would the world be different if Hillary Clinton had one the 2016 election?

Finally, it is necessary to consider how you are going to answer your question. This will ultimately take the form of your research design. Even before you have a full research design (discussed below), I recommend asking yourself, “*What will I have to do to show people that I have an answer to my research question?*” Are you going to conduct case studies? Are you going to conduct interviews? Are you going to try and look at some sort statistical data on the subject? Are you going to take a combination of approaches? You may not yet know what the most feasible way is to answer your question, but you should feel confident that there is a feasible way out there. If getting to an answer seems like it will be impossible, then the question is probably too broad, too normative, unanswerable, or perhaps too complex. In general, if you feel you do not have the skills necessary to answer a research question, stay away from that question.

B. How do you come up with a research question?

For many, figuring out what to research will be among the more daunting tasks in this process. Others may have been thinking about a research question or topic for some time and are excited to finally have a venue in which to research it. For those of you in the first camp, take some time to think about whether your question fits within the guidelines outlined above. For those of you in the second camp, here are some suggestions for coming up with a research question.

Begin by thinking about what topics that interest you the most. When you are reading the news online and are presented with an array of articles, which topics do you tend to gravitate toward? You are going to be spending a considerable amount of time on this paper so it ought to be on something that actually holds your attention. Once you know the broader topic, you can start looking for a more specific research question.

When I am coming up with research questions, I look for puzzles in the political world for which I do not have a satisfactory answer. A good way to get moving toward a question is to read about the topics you are interested in. Read newspapers, news magazines, commentary magazines, and academic journals. You can also watch documentaries and television news. Get to know the topic with an eye toward what puzzles you. If you are not sure what to be reading, ask and I will help you find sources.

IV. Examining the Previous Literature and Writing a Lit. Review

A. Types of Research

Whenever we do research, we do so in the context of those who did similar or related research before us. Understanding the previous research will inform the development of our own research by clarifying what we already know about the topic and *how* we learned it. It is thus critical that we consider that previous research carefully prior to proceeding with our own research. In an ideal world, an examination of the previous research should precede the development of theory (discussed in greater detail below); however, within the confines of an academic semester this is not always possible. As such, it is sometimes necessary to begin developing theory early on with the understanding that your theory may change or evolve as one examines the previous literature.

Of course, the previous research varies in type. In political science, we are generally most interested in the descriptive, theoretical, and empirical causal research on the topic.

Descriptive Research. This type of research describes the empirical state of the world without making any theoretical or causal claims. Examples of this type research include government documents and some think tank style reports. Descriptive research may also

include descriptions of events presented in newspapers, magazines, and other general-circulation and trade publications. Descriptive research helps us to establish background facts, sequences of events, and provide examples of political phenomenon.

Theoretical Research. This type of research presents serious, intellectual, and logical arguments about the topic. Most contemporary theoretical work also includes an empirical component (discussed next). However, theoretical work need not have an empirical component. When this is the case, the research is simply presenting a logical set of ideas that still require empirical testing. This type of research will generally be found in academic journals.

Empirical Causal Research. This type of research (which is also the type of research you will be doing in your own paper) involves the collection and analysis of evidence. Regardless of the type of evidence presented, empirical causal research offers an answer to a causal research question that helps us to better understand *why* something is the way it is. Good empirical causal research begins with a theory. Sometimes that theory was developed by the author of the piece; however, other times the theory may have been developed previously and the author is providing a test of the theory using new evidence.

B. Identifying Literature and Taking Notes

Identifying appropriate literature and taking effective notes are essential tasks for writing a good literature review. Literature reviews should focus exclusively on scholarly research and other published research from people or organizations respected in their field. Scholarly (or academic) literature appears in peer-reviewed journals and books (“peer-reviewed” means that the decision to publish the article or book was made by other experts in the field). Non-academic research that is appropriate for literature reviews typically comes from respected think tanks, government organizations, and non-profits. Of course, it is often necessary to look outside these venues. Discussion of newspaper articles, most magazine articles, blog posts, and opinion journalism is inappropriate in a literature review. In general, avoid books and articles aimed *exclusively* at popular audiences. There may be room to discuss these kinds of sources in your paper’s introduction, conclusion, and possibly in the analysis (as part of a case study) but they do not belong in your literature review.

Do not spend time reading articles and books that are not going to help you. There is a lot of scholarly research out there and you need to act quickly to identify what is important to your own research. Prioritize reading abstracts, introductions, and conclusions first. Use those to figure out if the article is going to help you. If you are trying to learn the literature, read the literature review and follow the citations. It often makes sense to review the bibliography of articles that are helpful to identify others that might be helpful. Note citations that seem relevant and then go find them. In short, use literature reviews and bibliographies to learn the literature.

Take notes as you go but do not note everything. If you need to know more, you can always return to the article. Each time you read an article always include a full bibliographic citation. As you are reading it is generally good practice to note the research question, theory/hypothesis, method (if you think it will be helpful), citations you think will be helpful, key finding, and key quotations. If you “copy and paste” or write a quotation down, make sure to document the page number and include an indication it is a quotation (I suggest putting it in a different color or highlighting it). By documenting it is a quotation, you will avoid the mistake of accidentally treating it as your own language later on.

C. Writing a Literature Review

A literature review should address the following three questions.

1. How does your research project build on or depart from previous studies?
2. What does previous research on related topics tell us about your topic?
3. Why do you expect to obtain different (or similar) findings or reach different (or similar) conclusions?

How do you organize a literature review?

A literature review *is not* a bibliography written out in prose. It should not read like a list that describes previous research. Rather, a literature review should be written as a discussion of the previous research in light of the above-stated objectives. As such, it is generally best to avoid writing a review that is organized by author or year. A better approach is to organize it by first explicating the organization of the literature on the topic and then reviewing it by concept. In explicating the organization of the literature on the topic, you are giving the reader a brief summary of the sort of related research that has been done on your topic (and topics you deem

to be sufficiently related and inform your own research). The beginning of the review can serve to explain what kinds of questions have been asked and how they relate to your own research. Once the general approach of the literature has been offered, you can review some of the details of that literature based on classes of explanations. You might even have separate subsections for each class or family of explanations. As you review these explanations, discuss what you perceive to be the successes and shortcomings of the previous research.

V. Developing and Presenting Theory

A. Development and Assumptions

Developing theory is among the most exciting parts of conducting research. It is your opportunity to be creative and present potential answers to the research question. Many students hesitate at the idea of offering a theory for a political science question. Whether you end up being right or wrong (and being wrong is OK!), *it is absolutely essential that you enter your research with a theory*. Undergraduate research papers can take one of three theoretical approaches. They can (1) test new theory, (2) test existing theory, or (3) test modifications on existing theory. For many, the third approach will offer the best opportunity to be simultaneously successful and creative. Remember that without a theory to guide your research, you will be left without a clear place to begin and with more potential answers than you could possibly address in a single paper.

Imagine for a moment that you decide that you want to go hunt for valuables buried in the sand at the beach in the evenings. There are several ways you can go about accomplishing this goal. One option is to go over to the beach, find a spot at random, and start digging. This may work but the beach is huge and it is likely to be some time before you find anything. Alternatively, you could go to the beach with prior knowledge about where people tend to sit on the beach. Think about this prior knowledge as a theory. Because you know which beaches people go to and where people tend to sit when they visit the beach, you have a good place to start looking. Valuables may turn up or they may not, but you are probably going to have greater success if you have something to structure your treasure hunting time.

Developing theory—especially new theory—is difficult. Good theory typically comes out of a long history of experience with the research topic and you may or may not have such

experience. Theory should emerge logically from defensible *assumptions*. Assumptions are statements about the state of the world that help define the context in which the theory takes place. In the event that the reader disagrees with your theory, she should be able to revisit your assumptions and retrace your logic. Returning to the beach example, the person looking for valuables is making assumptions about what kinds of people go to which beaches, what they are likely to take with them to the beach, and where they are likely to sit on the beach.

B. Variables and Hypotheses

Theories should be causal and logical. To get a sense of what this means, it is necessary to briefly discuss the language of variables. A variable is any condition that can take more than one state. Gender is a variable (male, female, transgendered), age is a variable (1, 2, 3...), policies are variables (strict v. flexible, policy v. no policy), most things are variables. When thinking in terms of causal theory it can be helpful to think in terms of two types of variables: *independent variables* and *dependent variables*. An *independent variable* is the cause and the *dependent variable* is the effect. As such, the term “causal” means that a change in the state of the independent variable results in a change in the state of the dependent variable. This necessarily implies that the change in the independent variable occurred before the change in the dependent variable.

Now, just because Event 1 happened before Event 2, it does not mean that the two are causally linked. Consider the following (famous) example.

Event 1. Ice cream sales increase \rightarrow *Event 2. Deaths by drowning increase*

It is true that when ice cream sales (the independent variable) increase, deaths by drowning (the dependent variable) tend to increase too. However, there is no logical reason to believe that higher ice cream sales *cause* more people to drown. This is an example of a “spurious relationship.” Warmer weather causes more people to swim, which in turn, causes more people to drown. The increase in ice cream sales just happens to be something that goes along with warmer weather. Indeed, logic tells us that there is no reason to believe that ice cream sales and drownings are causally linked. Put differently: we have no theory to connect ice cream sales and drownings. Good research follows from thoughtful theory. Whether you are trying to explain deaths by drowning or how members of Congress vote, it is helpful to think in terms of independent and dependent variables.

Clearly presenting your theory as a hypothesis can help you to clarify the logic of your theory. Hypotheses are formal statements that describe the relationship between two phenomena: as the state of one phenomenon changes, the hypothesis tells us how the state of the other phenomenon can be *expected* to change. In the language of variables. When the state of the independent variable changes we can expect the state of dependent variable to subsequently change in a predictable way.

Let's return to the four research questions I offered as examples in Section III above. A student interested in researching one of these questions is tasked with developing a theory that might offer an answer and then formalizing that theory into a hypothesis.

Question 1. What causes states to raise their minimum wage?

Theory. More unionized states will have higher minimum wages than less unionized states. The logic here is that unions put organized pressure on state legislatures and governors to raise the minimum wage. States where workers are not unionized will be less effective at organizing and, consequently, have less success.

Hypothesis. States with high union membership rates will have higher minimum wages than states with low union members rates, all else being equal.

Dependent Variable. State minimum wage.

Independent Variable. Percent of working people in the state that are a member of a union.

Independent Variable → Dependent Variable
Percent Union → Minimum Wage

Question 2. What causes the federal government to put flexible regulatory demands on states rather than inflexible regulatory demands?

Theory. When the same party controls the Congress and many state governments, the federal government will tend to institute more flexible regulations. The logic here is that the flexibility of federal regulations on states

is associated with how much the national legislators trust state legislators. The less they trust them, the more likely they will be to make it difficult on the states to choose their own policies.

Hypothesis. Periods of greater partisan difference between Congress and the states will result in more inflexible state regulations than periods with less partisan difference between Congress and the states, all else being equal.

Dependent Variable. The flexibility of federally imposed on regulations on states in a given time-period. (Measured by the number of lines in the federal legislation or a qualitative analysis of the legislation.)

Independent Variable. The partisan differences between the House, the Senate, and the average state legislature.

Independent Variable → Dependent Variable

Partisan difference → Regulatory flexibility

Question 3. What causes people to display a campaign yard sign?

Theory. Living close to a campaign office causes people to display a campaign yard sign. While there are a lot of factors that likely lead people to display a campaign yard sign, access to the signs may be an important factor. If you live near a campaign office for a candidate you prefer you it will be easier to obtain a sign and the presence of the office may spark interest in displaying a sign.

Hypothesis. People who live close to a campaign office for their preferred candidate will be more likely to display a sign than people who live far away from a campaign office for their preferred candidate, all else being equal.

Dependent Variable. Whether or not a person displayed a campaign yard sign.

Independent Variable. Distance to the nearest campaign office for the person's preferred candidate.

Independent Variable → Dependent Variable

Distance to campaign office → Display of campaign yard sign

For clarification purposes, let's spend a little more time with *Question 3* (What causes people to display a campaign yard sign?). The hypothesis sets out a clear relationship between the proximity of a person to a campaign office and whether they display a sign. This theoretical relationship comes out of some assumptions about how people participate in politics. It assumes that (one of the ways) people get signs is by going to campaign offices and that people use the presence of campaign offices as sort of cue for engaging in politics. The independent variable is distance to the nearest campaign office for the person's preferred candidate. Consequently, we would need to know the person's preferred candidate and how far they live from a campaign office for that candidate. This means we would need to know the location of person we are observing and the location of the campaign office. By putting "all else being equal" at the end of the hypothesis, the researcher is acknowledging that there are actually many potential causes of campaign yard sign display and that this hypothesis assumes that those other causes are controlled for.

It is not necessary that your theory be earth shattering. Nor is it even necessary that your theory be entirely new. What is necessary is that you have theory to structure the research process.

VI. Developing and Presenting a Research Design

If the research question is searching for valuables at the beach and the theory is to start by looking where people tend to sit, then the research design is the tool you use to find and dig for the treasure. Different tasks call for different tools. In the case of looking for valuables at the beach, a metal detector and shovel might be helpful. Even after you have a good general idea of where buried items might be, the metal detector will help you actually locate them and the shovel will help you to dig them up.

For a political science research paper, a research design has the goal of offering a method for answering the research question broadly and testing the theory or theories specifically (in my experience, metal detectors are usually not helpful). As such, a research design should address the following questions:

- A. How specifically are you planning to test your theory?
- B. What data, documents, or people do you expect to examine or talk to to test your theory?
- C. What are the strengths/weaknesses of the way that you are testing your theory?

A. Methodological Approaches

There are many ways (“methods”) that political science researchers can test their theories making a complete discussion of those ways beyond the scope of this document. With that in mind, research designs in political science do tend to fall into three categories. quantitative, qualitative, and mixed.

Quantitative Approaches. These approaches involve the statistical analysis of data. Quantitative techniques range from the examination of basic descriptive statistics to complex forms of regression analysis. Students comfortable with quantitative research approaches are encouraged to use them for their research design. In particular, students wishing to analyze survey data, election data, and/or government budgetary data are encouraged to take a quantitative approach. Students uncomfortable with quantitative approaches should feel no obligation to utilize one.

Qualitative Approaches. These approaches typically involve the analysis of the content of events. The most common qualitative approach is the case study. Case studies involve deep analysis of a phenomenon where events are studied in significant detail. W. Phillips Shively notes in a 2006 symposium on social inquiry, “The role of a case study (whether a study of two countries or of one country) is to examine the internal workings of a theory in a case or cases, both to test the theory and to develop it further.”¹ Case studies often involve historical analysis, content analysis, and/or elite interviews. Historical analysis involves carefully tracing sequences of events and the actors associated with those events. Content analysis generally involves closely examining the text of documents and the words of speeches. And with elite interviews, the researcher

¹ Shively, W.P. 2006. “Case Selection. Insights from rethinking social inquiry.” *Political Analysis* 14 (3). p 346.

actually speaks with the people that were part of the causal process being investigated.² At the undergraduate level, case studies are the most common research approach. Though they may not involve the analysis of numbers, case studies should always proceed in a scientific way motivated by theory. In the following section I offer some more suggestions about case studies.

Mixed Approaches. These approaches are, as the name suggests, a combination of quantitative and qualitative. Not coincidentally, this is perhaps the most robust research approach one can take as it integrates the conceptual rigidity of the quantitative approach with the “real-world” connections of the qualitative approach. This is also the most involved approach. Students interested in taking a mixed approach should not treat the quantitative and qualitative components as entirely separate endeavors but as symbiotic activities where one informs the other. One recommended approach is to use the quantitative analyses to understand broad trends and the qualitative analysis to see how the broad trends hold up on under specific conditions.

As was the case with theory, it is often good for students to model their research design on previously conducted research designs. Understanding previous research designs comes from having spent time with the previous research. In doing so, researchers are able to evaluate the feasibility, successes, and failures of previous efforts and model their own effort accordingly.

On the importance of comparison... By its very nature, all quantitative research involves the comparison of units; this is not true of qualitative research. For example, one could do a case study of a single event. That said, most causal claims necessitate comparative research as it is very difficult to evaluate causality based on a single example. In order for a theory to be supported we need to be able to apply the theory to multiple cases and see the expected outcomes. Though it is not required, students conducting case studies are strongly encouraged to conduct comparative case studies where at least two cases are selected for analysis and comparison. Each case should then be rigorously evaluated based on the theory. It may even be appropriate to examine the same case at multiple time periods (thus creating multiple cases). Single cases studies are most appropriate when we are trying to understand idiosyncratic or rare

² Note that interviewing other observers of the causal process (e.g. other researchers) does not typically qualify as an elite interview. The idea of the elite interview is to gain an “insider’s” perspective and not the perspective of another observer. The perspectives of other observers are generally discussed in the literature review.

events. Ragin (1987) offers a thorough explanation of how one goes about setting up comparative research designs.³

B. Selecting Data

No matter whether you take quantitative or qualitative approach to your research question, you will be analyzing data. Though we generally hear the term data in the context of numbers, this is hardly the range of the term. Data are (yes, “data are” not “data is”) merely the objects of study for the analysis. If you are doing a quantitative analysis of elections results, then the data are the amount of votes each candidate got. If you are doing a qualitative analysis of why it is that some state legislatures have enacted laws creating charter schools and other states have not, then your data may be the content of the interviews you conducted with staffers, or information about important legislative figures, or information about past education reform efforts. Do not let the term “data” scare you; it is merely what you will be examining for your research project.

Data for a research project must be obtainable. For example, students wishing to conduct some sort of original survey will need to be able to administer the survey. Obtaining a nationally representative sample is probably not feasible but surveying a group of non-profit leaders may be and using publically available survey data (such as that provided by the American National Election Study, the General Social Survey, or the Eurobarometer) is. You may not have time to go collect information on every bill in Congress or every article that ever appeared in the *New York Times*, but the Comparative Agendas Project has done a lot of that for you already. A list of potential data sources (for both quantitative and qualitative research designs) is too lengthy to include here but your professors should be able to help you to identify appropriate sources.

Case selection is a big part of doing any social science research. Whether you are doing a quantitative or a qualitative analysis, you must first determine *what you are going to be analyzing*. What states are you going to look at? Which elections are to be examined? Which policies are to be analyzed? What population is to be looked at? What time periods are going to be examined?

³ Ragin, C. C. 1987. *The Comparative Method: Moving Beyond Qualitative and Quantitative Strategies*. Berkeley: University of California Press.

When doing case studies, case selection is critical but it can also be tricky. George and Bennett note that, “there is always the danger that case study researchers’ subjective biases and commitments to certain theoretical propositions will them to select cases that over-confirm their favorite hypotheses.”⁴ There are many ways to go about selecting cases—each of which has its flaws. Sometimes our research question dictates the case selection. If, for example, your research question is about the differences between New York and New Jersey’s responses the 1996 welfare reform law, the cases are going to be New York and New Jersey. If, however, your research question is about how different types of states responded to the 1996 welfare reform law, you will need to determine some method for selecting a set of cases to study. There is a long and intricate literature on case selection in the social sciences. Students interested in learning more about case study selection are referred to Brady and Collier (2004), George and Bennett (2006), and Yin (2009).⁵

C. Unit of Analysis and the Data Matrix

The unit of analysis is the object that is being studied. It is the “what” or “who” that is to be examined. In political science, typical units of analysis include: individuals, groups, geographical units (country, state, city, census tract), and governments. Identifying your unit of analysis can be tricky but it must be done. Your research project can only have one unit of analysis. If you have more than one unit of analysis, you have more than one research project.

The data matrix is an essential concept for quantitative research and a very helpful one for qualitative research. A data matrix is simply a way to organize data that allows for analysis. It is a table (or spreadsheet) where columns represent variables and each row represents a different observation. Each observation is one instance of your unit of analysis. In order to conduct quantitative research, you must be able to put your data into a data matrix. You should always be thinking about what the data for your project will be and how it would go in a data matrix.

⁴ George, A.L., and A. Bennett. 2005. *Case Studies and Theory Development in the Social Sciences*. Boston. The MIT Press, p51.

⁵ George, A.L., and A. Bennett. 2005. *Case Studies and Theory Development in the Social Sciences*. Boston. The MIT Press. Brady, Henry E., and David Collier. 2004. *Rethinking Social Inquiry. Diverse Tools, Shared Standards*. Rowman & Littlefield. Yin, R. K. *Case Study Research: Design and Methods*. Vol. 5, Sage Publications, 2009.

Unit of Analysis	Observation
Person	Each row is a different person (e.g. Sally, Joe, Amanda, Greg)
Country	Each row is a different country (e.g. Canada, USA, Mexico)
Congressional Election	Each row is a different congressional election (e.g. Fasso v. Delgado in 2018, King v. Shirley 2018)

In the data matrix below, the unit of analysis is the “county”. Consequently, each row is a different county (in New York) and each variable describes an attribute of that county. For example, the column with the name CONAME indicates the county name, the column with the name TOTPOP00 indicates the population of the county in the year 2000 (e.g. Albany County had 46,529 people living in it in 2000), and the column OBAMA12PCT indicates the percent of the vote Barack Obama got in the county in 2012 (e.g. In Cayuga County, 55.5 percent of votes were cast for Obama).

Data Matrix

The first row contains variable names

Each column is a variable

Each row is an observation (county)

FIPS	ST	CONAME	MIDDEINC	TOTPOP00	TOTPOP08	OBAMA12VOTES	ROMNEY12VOTES	OBAMA12PCT	ROMNEY12PCT
36001	NY	Albany County	46529	294565	298515	80891	43029	65.81	34.19
36003	NY	Allegany County	32995	49927	50582	5658	9609	37.66	62.94
36005	NY	Beacon County	30953	1300050	1400000	288378	26104	91.64	8.36
36007	NY	Beacon County	38100	200536	196280	38315	34878	52.35	47.65
36009	NY	Cattaraugus County	34460	83955	82157	11695	15408	43.15	56.85
36011	NY	Cayuga County	39047	81963	81671	14162	11335	55.50	44.50
36013	NY	Chautauque County	34639	139750	136069	21815	25785	45.82	54.18
36015	NY	Chemung County	36859	91670	88951	15285	16207	48.54	51.46
36017	NY	Chemung County	34965	51401	52004	8340	8933	48.28	51.72
36019	NY	Clinton County	38409	78894	82754	17123	10054	63.01	36.99
36021	NY	Columbia County	43745	63094	63819	14244	11184	55.99	44.01
36023	NY	Cortland County	34916	48599	48629	9445	7886	54.50	45.50
36025	NY	Delaware County	33603	48055	47789	7469	9085	45.12	54.88
36027	NY	Dutchess County	56241	280150	297031	59883	52320	53.37	46.63
36029	NY	Erie County	42052	950265	928091	220184	159678	57.96	42.04
36031	NY	Essex County	35345	38851	38581	8835	6495	57.63	42.37
36033	NY	Franklin County	32428	51134	51239	9065	5248	63.33	36.67

D. Variable Types in Quantitative Research

A lot of political science research is quantitative. This means that the analysis being conducted uses numbers to measure variables and statistics to analyze them. While an explanation of

statistical techniques is well beyond the scope of this Guide, knowing and understanding the different quantitative variable types can be helpful for developing research questions and research designs and is essential for determining what kind of statistical analysis is appropriate. Earlier in the Guide, I discussed the difference between dependent and independent variables. The distinction I am interested in here is not which side of the causal arrow the variable falls on *but how the variable is measured*. Below I describe four of the key variable types and provide examples of them.

Continuous (or Interval) Variable: Can take any numeric value (integers or decimals). There does not have to be a minimum/maximum value but there can be (as is the case with percentages). The differences between variables values are clearly understood. Sometimes continuous variables are equally spaced, sometimes they are not.

Examples:

- Median Income: \$23,001.00; \$40,000.23; \$63,212.45; \$82,112.78
- Percent: 1%; 23%; 42.5%; 86.1%
- Votes: 211; 1,206; 9,000,001; 439
- Days a person had breakfast last week: 1, 2, 3, 4, 5, 6, 7 [equally spaced, min is 0, max is 7]

Ordinal Variable: The values the variable takes have a clear order to them but the “true” distance between them is not known.

Examples:

- Happiness: Not Happy (1), Happy (2), Very Happy (3)
 - We know that Happy is better than Not Happy, and Very Happy is better than Happy, but how much is open to interpretation by the respondent.
- Education: Elementary School (1), Middle School (2), High School (3), Some College (4), College or More (5)
 - We know that High School is more than Middle School but how much Middle School they had and how much High School they had is not known. If the variable were “years of education” then it would be continuous.
- Political Ideology: Very Liberal (1), Somewhat Liberal (2), Moderate (3), Somewhat Conservative (4), Very Conservative (5)
 - Ideology has a left to right ordering to it going from very liberal to very conservative. However, the difference between very liberal and

somewhat liberal is not something we know – it is subject to interpretation by the respondent.

Categorical (or Nominal) Variable: The values the variable takes have no sensible order to them.

Examples:

- Race/Ethnicity: Black, White, Asian, Hispanic
- Sex: Female, Male
- Government Type: Democracy, Autocracy, Military Junta

Dichotomous (or Dummy) Variables: Any variable that take only two values. Typically, we make those values 0 and 1. *Dichotomous variables can be ordinal or categorical.*

Examples:

- Sex: Not Female (0), Female (1) [categorical dummy]
- Race: Black (0), Not Black (1) [categorical dummy]
- Happy: Not Happy (0), Happy (1) [ordinal dummy]

E. Appropriate Statistical Tests

Different variable type combinations call for different types of statistical analysis. The following table can serve as a guide for determining what type of statistical analysis might be appropriate for your research. This table assumes familiarity with the tests.

Appropriate Statistical Tests Based on IV and DV Type

		IV			
		Continuous	Ordinal	Categorical	Dichotomous
DV	Continuous	- Correlation - Scatter Plots - Regression (OLS)	- Correlation - Regression (OLS)	- Difference of Means - Regression with Categorical Dummies	- Difference of Means - Regression (OLS)
	Ordinal	- Correlation - Regression (OLS) ¹ - Ordered Logit	- Correlation - Regression (OLS) ¹ - Ordered Logit	- Crosstabs - Regression with Categorical Dummies	- Difference of Means - Regression (OLS) ¹ - Ordered Logit
	Categorical	- Multinomial Logit	- Crosstabs - Multinomial Logit	- Crosstabs - Multinomial Logit	- Crosstabs - Multinomial Logit
	Dichotomous	- Logit/Probit - Correlation	- Crosstabs - Logit / Probit	- Crosstabs - Logit / Probit with Categorical Dummies	- Crosstabs - Logit / Probit

¹ OLS can be used with ordinal dependent variables but it is often not the best choice if there are fewer than 5 levels.

F. Strengths and Weaknesses of Research Designs

A good research design includes both a defense of the determined approach and an acknowledgement of its weaknesses. Clarifying the imperfections to the reader bolsters the believability of those results even it limits their generalizability. No research design is perfect but you should not proceed with your design unless you believe in the results it is going to yield.

VII. Analysis

The analysis is the execution of the research design and because each research design is different, it is difficult to offer clear advice on how to proceed. The analysis section is where you present your findings. Writing research findings is difficult and improves with practice. *The most important thing to remember is that the analysis section should offer a clear answer to your research question in the context of your theory and hypotheses.* Each hypothesis should be addressed individually: Was the hypothesis supported by the evidence or not?

Here are some other tips for writing your analysis:

1. *Use your theory to structure the analysis section.* Just as theory and hypotheses are helpful for directing research they are also helpful for directing the presentation of the research. If you followed the structure of formalized hypotheses, then your analysis should follow a similar structure. Present the results for hypotheses in the same order as the hypotheses were presented. After completing your research, you may find some of your theories are more interesting than others. That is fine and you can feel free to indicate as much in the analysis section. More interesting analyses should get lengthier consideration in the paper.
2. *Write too much and then revise it down.* When you are writing your findings up for the first time, always include more information than less. If you think it might be important, write it down. As you revise your drafts you will make decisions about what is worth keeping and what is not. Moreover, you will find ways of synthesizing the information such that more is said with less.
3. *Figures are helpful.* Tables, graphs, and figures (hereto referred to as “figures”) can be helpful for the presentation of both quantitative and qualitative research. Figures can

be used to present numbers but they can also be used to present ideas. Often, researchers will develop many figures based on their analysis that are more illuminating to the researcher than they are likely to be to their audience. In this case, the figure has helped you to understand your own research more clearly and as such will help you present it more clearly (even if the figure is not included in the actual paper).

VIII. Conclusion/Discussion

The conclusion section (often called the “Discussion”) is the final section of the research paper. It generally serves four purposes.

1. To summarize the paper.
2. To explain the contribution of the paper to our understanding of the political world.
3. To explore the strengths and weakness of the research
4. To suggest opportunities for future research.

By the time the reader gets to conclusion, she should already have a clear grasp on the content of the paper. As such, the summary should be short and merely highlight what you believe to be the major components of the research. Explaining the contribution should constitute the bulk of the conclusion and may be integrated with the summary. This is your opportunity to step back from the nitty-gritty of the research and consider its place in a broader context. In doing so, you may also indicate how your findings might help to achieve more normative goals. It is often wise to consider the strengths and weaknesses of the paper—acknowledge where you succeeded in meeting your objectives and where you did not (no paper succeeds in meeting every one of the author’s goals). Finally, research often presents more questions than it does answers. You can use your discussion section to raise these questions and to consider how they might guide future research on the topic.

IX. Confronting Complications

It is the rare research design that is executed without problem. *Research is difficult, really difficult.* Whether you are examining statistics or studying history, complications will present themselves. Below are some of the complications that I have encountered frequently in both

quantitative and qualitative research. None of these complications are necessarily fatal but they are all stressful.

- Difficulty obtaining data/information that you thought was obtainable.
- The data/information obtained did not contain what you expected it to.
- The research is taking longer than you planned.
- Determining that your research question is too broad.
- Realizing that others have executed very similar research.
- Coming to different conclusions than you expected to.
- Completing your analysis only to find that you skipped over something (that now seems) important.
- Losing interest in your research.

In most cases, the best thing to do when one of these problems occurs is to take a step back (and often some time off) to regain perspective. Know that you are not the first to encounter these problems and you will not be the last. I recommend evaluating what *has* worked and what *has not* worked in your research thus far. Identifying something as having “worked” can mean more than the research produced the desired conclusions. For example, something that “worked” could have been finding a source that was helpful or enlightening. Returning to the moments in your research when things appeared to be leading you in the right direction can help you to move forward down a revised, more fruitful path. It is also often wise to seek out the help of the professor.

Of course, not all projects are successful (I have certainly had my share of failed attempts and abandoned ideas). This can be particularly frustrating in the context of the one-semester research paper, which is already conducted with a cramped schedule. There are situations where a new project ought to be attempted but, more often than not, a rethinking of the question, theory, or method is what is in order.

X. Sourcing

In an academic community our ideas are our capital. The taking of ideas or of the language used to communicate those ideas without proper attribution is theft and it hinders the intellectual, professional, and personal advancement of those to whom the ideas or language rightfully

belong. Plagiarism, cheating, and other forms of academic dishonesty are not tolerated. All references to outside sources (direct or indirect) should be appropriately cited.

Sourcing is often a subject of much confusion for students. This confusion is justified considering how many different ways there are to source and the varying expectations and requirements that professors have for how students source their papers.

Most faculty require sourcing in their papers that have the following attributes:

1. Has a bibliography at the end of the paper.
2. Uses in-text citations (parentheticals or footnotes) that allow for the reader to easily identify the bibliographic entry at the end of the paper.
3. Document pages for direct quotations.
4. Is stylistically consistent.

In my classes, *all papers must have in-text citations (parentheticals are preferred but footnotes are acceptable) and a bibliography*. I recommend students use the APSA citation styles for in-text citations and their bibliography.⁶ Students should always remember to cite both direct quotations and ideas that are not your own. Failure to include the appropriate citations and a bibliography is considered plagiarism.

I also encourage students to use source management software. I highly recommend Mendeley.⁷ In addition to offering a platform for organizing citations, it can automatically format the citations to hundreds of different styles and integrates seamlessly with Microsoft Word. Once integrated with Word, Mendeley allows writers to select citations within Word and then it automatically adds both the in-text parenthetical citation and the bibliographic entry at the end of the paper.

A. How and When to Use Citations

Citations are necessary for three different types of sources. You must provide citations for “direct quotes” or statistics, paraphrases, and general ideas that have helped you to

⁶ A “style guide” is set of rules for sourcing that generally specifies what kind of in-text citations are used, what is included in the in-text citations, and how bibliographic entries are structured. Style guides also indicate how to format papers (titles, sub-titles, sections, etc.).

⁷ <https://www.mendeley.com/download-desktop/>

write your paper. If an entire paragraph is paraphrased from a single page of a source, a citation at the end of the paragraph can work. If the material used to write a paragraph comes from different pages or several sources, you should place a page-specific cite every time the source/page of the material has changed. You should do the same if some of the material in a paragraph is paraphrased from a source, but other parts of the paragraph are your own ideas and analysis.

B. Formatting Parenthetical Citations

The standard in-text parenthetical citation without a page number should come at the end of a sentence before the period.⁸

Example: Prejudice and intolerance are commonly understood to be the product of competition for economic benefits (Bonacich 1976).

If you add in a page number:

Example: Prejudice and intolerance are commonly understood to be “the product of competition for economic benefits” (Bonacich 1976, 35).

If there are multiple references in the same citation:

Example: Prejudice and intolerance are commonly understood to be the product of competition for economic benefits (Bonacich 1976; Cummings 1980; Cummings and Lambert 1997; Olzak 1992; Scheve and Slaughter 2001).

However, in-text citations can be tricky. There are a handful of caveats to be aware of to make sure that you correctly cite materials used in your papers. Here are some tips:

- Sometimes, you will find that key ideas have come from several works (Bates et al. 1998, 14-45; Jones 1990, 88). Note the use of the semi-colon to separate the different sources.

⁸ Special thanks to Kathleen Dowley (SUNY New Paltz) for sharing her citation guide. Some of the examples that appear in this section also appear in her guide.

- Observe how you should punctuate the citations “when text is being quoted” (e.g. Smith 1995, 23). Each citation has the last name of the author, the date the material was published in it, and the page number (if necessary). If there are two authors, include both last names (e.g. Smith and Jones, 2006). If there are more than three authors, put the last name of the first author and then “et al.” followed by the year and the page number if necessary (e.g. Smith et al., 2000).
- Observe that when the same author has more than one work from a single year, the citations are referenced as 1991a, 1991b, and so on when using the APSA format (e.g. Elster 1991b, 43).
- When you use the author’s name in the text of the sentence, you can omit the author’s name from the parenthetical citation. For example: “As Smith (1994) explains, democracy is...”
- If available, page numbers *must* be used whenever the reference applies to a specific section of an author’s work. If you have obtained a work electronically (e.g., from a class website or an on-line full-text database), you still must cite page numbers (e.g. Lee 1998, 3) if they are available. The only time you do not use page numbers is when an entire work sums up the ideas you are expressing.
- If you are citing a source that has been found within another source, you should note this in your citation (de Tocqueville 1837, 23 as cited in Gil 2003, 15) and include the original source in your bibliography.
- When you have a quotation longer than about five lines, make it a block quote. To do this you indent on the left just as much as you would for a paragraph. You also indent from the right the same amount. The block quote should be single-spaced within the quote, but double-spaced between the regular paragraphs and the quote. Include your citation at the end of the block quote paragraph. Continue on with the paragraph without an indent, unless you start a new paragraph immediately after the quote.

C. Formatting Bibliographies

Bibliographies should be neatly organized and proofread carefully. They should also be *alphabetized based on the first word of the entry*. Here are some sample bibliographical entries for journal articles, books, book chapters, and websites.

For Journal Articles:

In this example, 55 is the volume number, February is the issue (sometimes, only an issue number will be available, and should be placed in parentheses in lieu of the month). The numbers 112-42 are the page numbers the article spans:

Smith, Wendy A. 1995. "The Article Title." *Journal Title* 55 (February): 112-42.

Smith, Wendy A. and Robert C. Herman. 1995. "The Article Title." *Journal Title* 55 (1): 112-42.

For Books:

If the city where a text is published is well known (e.g. New York) or if the state is implicit in the publisher (e.g. The University of North Carolina), then the state initials are left out:

Parker, Catherine A. 1995. *Book Title*. Baltimore, MD: Johns Hopkins Press.

Parker, Catherine A. 2000a. *Another Book*. New York: Columbia University Press.

Parker, Catherine A. 2000b. *Yet Another Book, but From the Same Year*. Chapel Hill: University of North Carolina Press.

For Chapters or Sections of Books:

If the piece referenced is a chapter in an edited volume book, you need to include information about both the author(s) of the chapter and the book.

Seinfeld, J. 2010. "Article Title." In *Book Title*, edited by L. David and A. Berg. New York: NYU Press.

For Websites:

For websites, the idea is to include as much information as you can that will help your reader track down your source to verify your interpretation or to use the source in her/his own work. Make sure to include the address and the date it was accessed (as websites change without notice).

Citizens for Fair Elections. "2001 Elections Outcomes." Boston: Citizens for Fair Elections.
Accessed: June 20, 2001. <http://www.elections.org/articles/no_author.html>.