Writing Advice for Political Science Students: Version 2.0

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Abstract

How does one effectively structure a research paper to clearly and concisely explicate new and important ideas about politics? Existing writing documents provide helpful guidance, but leave the important question of how to structure the document relatively untouched. This document advances this goal by outlining and providing advice for a research paper that includes statistical analysis. Key elements include the title, abstract, table of contents, topic paragraphs and sentences, introduction, literature review, theory, data setup, empirical analysis, tables, figures, conclusion, and writing odds and ends.

Keywords: Political Science, Writing, Stuff
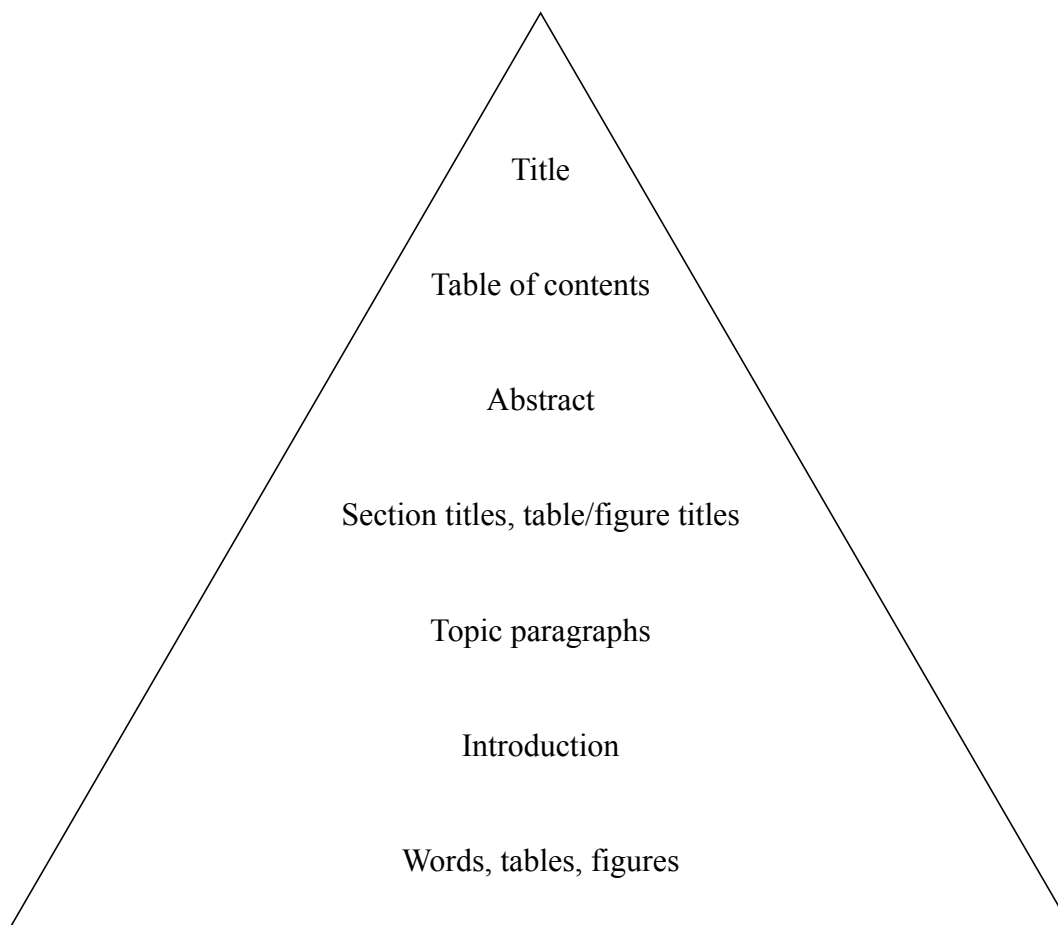
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The Task at Hand

Writing an original research paper poses a daunting task. Constructing a viable idea is necessary. Typically, reading history, and critically reading and replicating existing political science articles provides the best source of inspiration. But even with an idea about a hole in the literature regarding an important topic, large challenges loom. How do I convey this idea to a political science audience? What details do I need to include in a paper? How should I organize those details? Collectively, these questions about writing and organization may make a research project seem like an *immovable object*.

How does one move an immovable object? I propose a simple solution: take a hammer, and break the immovable rock into smaller pieces that facilitate transit. (As with most facets of life, the Simpsons have already proposed this solution. As Waylen Smithers once said to Homer Simpson, I realize caring for Mr. Burns seems like a big job, but actually it's just 2,800 small jobs.) But where should you start swinging your hammer? This document provides suggestions. It provides advice on the sections to include in a political science research paper, and some guidance for what material to include in each section. Equipped with this guide, you can start to fill in individual pieces, rather than trying to tackle the immovable object in one swoop. Figure 1 summarizes the advice. A paper consists of numerous distinct parts that, roughly, can be ordered in the following manner. An effectively written paper coordinates these distinct parts to ensure that they form a coherent whole. This requires constant editing throughout the writing process.

Figure 1: Pyramid of Paper Components

Title

Table of contents

Abstract

Section titles, table/figure titles

Topic paragraphs

Introduction

Words, tables, figures

Why is this so important? Shouldn't the reader be expected to exert significant energy to figure out what your paper is about. Categorically, no. You need to provide a way for readers to discern the most important takeaways from your paper in as little time as possible. This places a heavy burden on the writer: if the key elements of the paper are not organized coherently, bad consequences will follow. Your advisors will be upset with you. Referee #3 will reject your paper. Search committees will throw out your application. People will spit on you as you walk along the sidewalk. Politicians will continue to ignore facts and science. But you have the power to prevent these unfortunate events! (Except probably the last one, and the second-to-last one is unlikely regardless of your quality as a political scientist.) ***Invest immense amounts of time to improve your writing and organization. It is time well spent.***

A few odds and ends before we start:

- All the sections that should appear in an actual paper are numbered, whereas the other sections in this document are not. The table of contents lists the sections that an actual paper should include, but does not list every section in this document.

- This document is primarily geared toward an empirical paper, although much of the advice is also relevant for formal theory papers. I plan to have a separate document on writing formal theory papers at some unspecified point in the future.

- A caveat: clear writing should complement rather than substitute for quality science. If your research design is poor or game theoretic model is solved incorrectly, then the best writing in the world (hopefully) will not save your manuscript. Between writing and science, writing is much easier. Social scientific writing is relatively formulaic, whereas science requires harder training and more creativity. However, until you have mastered how to write for political scientists, your contributions are likely to be undervalued.

What I Expect from Students When Reading Their Papers

I can provide more productive feedback on students' papers when they meet certain preconditions, namely, doing the things outlined here. Even if it's a fairly early draft, it's helpful to list out all of the planned sections for the paper (even if some of the sections are blank). Every paper, even preliminary, needs a title. Even if you don't yet have results, writing out parts of an abstract is useful to focus your thoughts on what you think the most important points are. Ditto with the intro: answer as many of the intro questions posed below as you can. Topic paragraphs and sentences are crucial so that I can understand the main takeaway points. Clearly marked variable labels in regression tables accompanied by a clear description of the data is necessary for me to understand the statistical results. Basic grammar checking is important so that I can read the document without getting distracted by nonsense. The more you accomplish with regard to these tasks, the better

feedback you will get.

The present advice complements other excellent writing advice documents, and I expect students to engage with these also. The present document differs by focusing primarily on organizing the sections of a paper. David Collier's writing advice document (email me for copy) is more comprehensive and provides many examples from published articles, along with a host of specific grammar advice. Andrew Little characterizes the three main strategies for introducing a paper. Barry Weingast requires you to focus on one main takeaway point. Kosuke Imai instructs you to think about the relationship between sentences in your abstract, paragraphs in your introduction, and sections of your paper. Gary King focuses on replication but provides generally applicable advice for structuring empirical papers. Zachary Elkins provides links to a host of other writing documents. Also read the submission guidelines at various journals, even if you are not ready to submit a manuscript there. Although mostly focused on more specific points that are not crucial until actually submitting a document, they contain little odds and ends that are useful to have in mind (and provide words counts, which for most journals are between 10,000 and 12,000).

Title

Suppose you are searching for articles on a specific topic, perhaps through previous issues of a journal, perhaps through JSTOR. What is the first and possibly only piece of information you learn about an article? The title. The title should be informative by containing information about the topic and perhaps your answer as well. Many titles contain a short broad phrase punctuated by a question mark/colon and followed by a second, more specific phrase. (See the Collier writing guide for specific examples.) This is an important issue beyond academic papers. Many criticized Hillary Clinton's 2016 presidential campaign message for lacking a succinct and coherent reason to vote for her, as opposed to Bernie Sanders (democratic socialism) or Donald Trump (racism and economic nationalism). Enable your paper to exceed 270 electoral college votes. Like all aspects

of a paper, it is helpful to revise your title throughout the writing process.

Abstract

Suppose, once again, that you are searching for articles. What is the second piece of information you learn about an article? The abstract. If the topic seems unrelated to your interests or if the analysis seems poorly done, then you are unlikely to read further. The abstract is the elevator speech for your paper. For example, imagine that you get into an elevator with Barack Obama and you are both riding to the top of a tall building. What would you say about your paper? How can you convincingly convey the question and answer in 2 minutes? (The hypothetical building is tall.) Remember this mantra and live by it: ***No abstract implies no clear idea.*** Here is a template for how to organize the abstract of an empirical research paper, sentence by sentence:

> [1. Research question] [2. Gap in literature] [3a. Your hypothesis(ses)] [3b. (Optional) Second sentence about hypotheses] [4a. Data setup] [4b. (Optional) Statement about methods] [5a. Main empirical findings] [5b. Second sentence about empirical findings] [5c. (Optional) Third sentence about empirical findings]

And, for a game theory paper:

> [1. Research question] [2. Gap in literature] [3. Short statement of model setup and main tradeoff] [4. Result 1] [5. Result 2] [6. Empirics if applicable]

A good rule of thumb to help structure the abstract and introduction is that, roughly, ***one sentence in the abstract should correspond to one paragraph in the introduction, which should correspond with one section of the paper*** (I poached this suggestion from Kosuke Imai's writing document, linked above). Finally, note that most political science journals have a limit of 150 words for an abstract. You should stick to this when writing and revising your abstract.

Table of Contents

Published articles in political science do not contain a table of contents. I do not understand why. The table of contents, much like the title and abstract, provides a concise summary of the information in the paper. Similar to the paper's title, titles for individual sections require careful thought and should be revised throughout the writing process. Including a table of contents in the paper during the draft stages help to organize thoughts. Personally, I usually put a table of contents on the first page of the appendix along with a list of tables and a list of figures to accompany the published manuscript.[1] If the table of contents does not provide a coherent guide for the argument and evidence that you advance in the paper, then it suggests you need to reorganize the paper. In fact, the main goal of this document is to provide a template for what sections should be included in (most) statistical empirical research papers. Furthermore, listing out every table and figure is also helpful for coordinating their titles with each other and with the section headers.

Contents

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[1] The respective LaTeX commands are \tableofcontents, \listoftables, and \listoffigures.

List of Tables

List of Figures

Topic Paragraphs and Sentences!

The final key component of the infrastructure for the paper are the topic paragraphs that begin each section, and the topic sentences that begin each paragraph. The goal of a topic paragraph is to explain the section title and to summarize the main takeaways from the upcoming section, and the goal of a topic sentence is to state the main takeaway of the upcoming paragraph. In most cases, if a paragraph contains multiple ideas, you should break it into multiple paragraphs. Long, wandering paragraphs are awful. Similarly, long sections without constituent subsections (the introduction is a partial exception) are unbearable. Consider introducing subsection distinctions for much the same reason that you break long blocks of text into multiple paragraphs.

The section headers are the bones of the paper. The topic paragraphs and sentences provide the flesh. The paper cannot live without flesh! (I suppose to finish the analogy, the other components of the paper are the organs and other things about biology and stuff.)

1 Introduction

For better or worse, the introduction is the most important part of a political science paper. The introduction section—perhaps spilling into the literature review section—should answer five key questions.[2] Failing to clearly answer any one of these questions may be sufficient for referee #3 to recommend rejection. It may be a useful writing exercise to directly answer each question before proceeding to write several pages that resemble a standard intro section.

1. What is the research question? Your answer is irrelevant if you do not have a question. If the research question is not clear within the first sentence of the abstract or the first/second paragraph of the paper, then it is time to rewrite. It is perfectly fine to start with a broad question like "What causes Y?" and after several paragraphs narrow it down to a question of the form "What is the effect of X on Y?" or "How does X affect Y?"

2. Why is this question interesting/important? There are two possibilities: inherent importance because it affects human welfare, and considerable scholarship has focused on it. The latter spills into the next question.

3. What does the existing literature say, and what are the gaps with regard to answering this question? Typically, an author characterizes the literature as either incomplete, contradictory, or wrong.

    (a) For questions that have received little attention, you can simply say that few contributions have focused on this question—although, appealing to the previous point, this puts additional burden on emphasizing the inherent importance of the question. Or, sometimes you can simply identify a gap between two big literatures. For example, many have studied the political effects of oil production and many have examined why human rights violations vary across countries, yet few have examined the relationship between oil production and human rights violations. Another possibility is to present

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[2]These questions complement Andrew Little's writing document, see link above.

an empirical pattern that the literature has not previously shown.

(b) For questions that have received considerable attention, one possibility is to argue that existing arguments contradict each other. For example, scholars X argue this, scholars Y argue that, however when we think about X and Y together, they cannot both be correct.

(c) Arguing that existing arguments are in conflict with each other is generally less risky than the third option: explicitly arguing that others are wrong. Typically, focusing on the errors of others should not be the main target in the introduction, whereas later in the paper you can gently point out some problems with existing research and why we need more research on the topic. Remember, the people that are wrong are likely to be referee #3. A generally good writing tip is to take out needlessly aggressive phrases.

(d) Although you do not want write overly aggressively, it is useful to consider: who is wrong? If no one is wrong, then we likely do not need more research on the topic. The less well trodden the research question, the less important it is for someone to be wrong to establish the need for more research on the topic—but it is unlikely that *no* existing research is incorrect in a manner that would not be helpful to frame the contribution of your paper.

4. What is your argument? You should draw a line after the third paragraph of your intro (maybe fourth, if you start with short and punchy paragraphs). If referee #3 has no sense of what your paper is going to do by then, then he or she will reject your paper—meaning you need to get to the point sooner. *You're not writing a mystery novel: be clear about your answer up front!*

5. How does your answer differ from *and* improve upon the existing literature? Simply saying something new is necessary but not sufficient, and this requires a clear statement of why your answer is in fact novel. However, you also need to convince referee #3 that your study truly constitutes an improvement. For empirical papers, this could involve new data

collection or a different research design that better eliminates alternative explanations. For game theory papers, this could involve modeling something in a new way or highlighting a new mechanism to explain an outcome. The most frequently stated reason that referee #3 rejects a manuscript is that it fails to offer a sufficient advance over the existing literature on topic X.

2 Literature Review

Why do papers review the literature? Passively summarizing existing work doesn't do much good. Instead, the point of discussing the literature relates to the points discussed for the introduction: you need to characterize what existing work has done to enable characterizing what it **_hasn't_** done. The reader can only judge whether your findings significantly advance our understanding of politics if you clearly and accurately juxtapose your results with what the existing literature has established.

The topic paragraph for the literature review section is particularly important since literature reviews vary in their purpose. The topic paragraph should succinctly state the main takeaway from the literature review, which typically relates to the main takeaway from the existing literature as well as the main gaps. You don't have to discuss your findings in this section, but the gaps in existing research should clearly set the stage for your own setup and findings that you previewed in the introduction.

Not every paper needs a stand-alone literature review. If the literature review is short, you can typically fold it into the introduction.

However you organize your literature review, be sure to succinctly state what the literature has established, and the crucial gap in existing research that you address.

3 Theory

Empirical papers differ in the extent to which they develop an original theory. If all the hypotheses arise directly from the existing literature, then you can state the hypotheses in the literature review section and omit a separate theory section. If you have a separate theory section, then even without a formal model, you want the hypotheses to build off a core mechanism as opposed to presenting scattershot, isolated hypotheses that do not derive from a central logic. Unless you're only examining a single hypothesis that is straightforward, you will want to list explicit hypotheses that follow a discussion explaining their logic. For example:

Hypothesis 1 *SLPCS groups should participate in civil wars more frequently than SL groups.*

Hypothesis 2 *PCS groups should participate in coups (attempted and successful) more frequently than SL groups.*

Hypothesis 3 *SLPCS groups should gain inclusion in power at the center less frequently than SL groups.*

4 Historical Background

If your statistical analysis focuses on a particular case that is not generally familiar to the reader, it is often useful to provide brief historical background on the case. Sometimes you should integrate this with the theory section, other times it stands alone. I find organizing the historical background section difficult because it's not entirely clear what information it should contain. My paper "Ethnic Violence in Africa: The Destructive Legacies of Pre-Colonial Statehood" provides one attempt of mine to effectively organize historical background material.

5 Data Setup

The data setup section typically contains the following five elements. It's usually clearer to have separate subsections rather than to mangle them together. Going against the general rule, this section doesn't usually need a topic paragraph because the information this section contains is self-explanatory.

5.1 Sample

What is the unit of analysis? What are the set of units and time period? What are the data sources? If your choices are standard in the literature, state that and provide associated citations. If not, defend the way you do it.

5.2 Dependent Variable

Describe the dependent variable and its sources. If it's originally collected data, say that and describe how you compiled the data.

5.3 Main Explanatory Variable

Describe the main variable(s) on which your analysis will focus and their sources. If it's originally collected data, say that and describe how you compiled the data.

5.4 Covariates

Describe additional variables included in the regression tables and their sources.

5.5 Statistical Models

State the statistical models you estimate. For example, Table 1 estimates:

$$Polity_{it} = \alpha + \delta BritishColony_i + \beta X_{it} + \epsilon_{it}, \tag{1}$$

where $Polity_{it}$ is the *polity2* score for country i in year t, δ is the main parameter of interest, and X_{it} is a vector of covariates that differs across specifications.

If the statistical method you use is uncommon in political science, then explain how it works. Otherwise, this subsection can be short (e.g., you don't need to explain what OLS or logit is). Also state how you calculate the standard errors, whether you use fixed effects, etc.

6   Empirical Analysis

You should organize the statistical analysis around one or, at most, a ***handful*** of tables and figures that present the most important results. If you have additional robustness checks, put them in the appendix to not clutter your document (see the end of this document). Because regression tables contain some of the most important takeaway points, it is crucial to not have too many.

In many cases, it makes sense to have multiple sections for different statistical results. Here, I'm going to highlight the type of information a regression table should convey. A good rule of thumb is that if you include a table and/or figure in the body of the paper, then you should spend at least one paragraph explaining the content of that table or figure.

Some highlights of the example Table 1:

- Although the title of Table 1 is short, it is informative because it concisely states that the table contains the main results.
- The top line states the dependent variable.
- The sample changes by column, as the top of the table states. Alternatively, this information

Table 1: Core Results

| | All post-indep. years, 1945- | | First independence year | | Post-1991 | |
	DV: *polity*2 score					
	(1)	(2)	(3)	(4)	(5)	(6)
British colony	3.301***	2.482**	6.038***	6.912***	1.062	0.0463
	(1.173)	(1.038)	(1.473)	(1.575)	(1.295)	(1.331)
Ethnic frac.		-2.630		-0.988		-0.596
		(2.298)		(2.525)		(3.214)
Muslim %		-0.0325**		-0.0309		-0.0341**
		(0.0131)		(0.0186)		(0.0153)
ln(GDP/cap)		1.025		0.423		0.569
		(0.657)		(1.028)		(0.868)
ln(Pop.)		0.669*		0.544		0.372
		(0.388)		(0.478)		(0.456)
ln(Oil & gas/capita)		-0.460*		-0.753*		-0.549*
		(0.235)		(0.397)		(0.279)
Country-years	3,825	3,681	73	69	1,734	1,663
R-squared	0.062	0.169	0.200	0.376	0.008	0.145

Notes: Table 1 summarizes a series of OLS regressions by presenting coefficient estimates, and country-clustered robust standard error estimates in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

could go at the bottom of the table. If some of the specifications contain unit fixed effects, it's common to have a row at the bottom of the table that states "Unit FE?" to the far left, and each column says either "YES" or "NO."

- The columns are numbered.

- The variable names on the left-hand side are concise but informative. Never present STATA variable names in a paper.

- Rather than "Observations," the table states the unit of analysis: country-years.

- The main explanatory variable, British colonial rule, is the first covariate listed. This makes it easy to find the most important information in the table.

- Each entry contains the coefficient estimate, and the standard error estimate is in parentheses.

- The note at the bottom of the table briefly summarizes important information, including how the standard errors are calculated.

- Other than the estimates, the table contains no information that the data setup section did not introduce. But it's important for the table to succinctly recapitulate the key information so that the table stands alone. ***Remember that the regression tables are one of the key components of the paper. The reader should be able to look just at the regression tables and learn many of the key takeaway points.***

In addition to the table itself, the (at least one) paragraph that accompanies each table needs to state in words what we learn from the table. Is the main explanatory variable statistically significant across the specifications, or is it sensitive to particular specification alterations? Is the magnitude

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of the coefficient estimate large? What do we learn (for example) about the correlation between British colonial rule and democracy???

Political Analysis' submission requirements contain additional excellent advice for the information that should accompany tables and figures in an article.

7 Conclusion

Conclusions typically provide a brief summary of the paper and discuss broader implications and possible future research topics. This is typically the least important part of the paper.

What if my Paper Doesn't Fit This Structure?!?!

The suggested sections contained here provide a structure for the most basic empirical research paper. In some cases, as noted, the literature review and theory sections should be combined (or the literature review should be folded into the introduction), or the empirical analysis should be split into multiple sections. In several of my papers, the section following the introduction establishes a particular empirically pattern that the remainder of the paper attempts to explain (i.e., inverting the order of the sections). For most papers, starting with the present grouping of sections will prove helpful, but this is guidance rather than rigid rules.

If you want to organize your paper differently and are unsure where to look, the answer lies right in front of you! Read existing publications with an eye toward how the authors organize the document, as opposed to evaluating its scientific merit. Take several articles and invert them from a published document into an outline. How do the authors organize the main elements of the paper? How does they answer the main introduction questions? Doing this numerous times will not only provide templates for writing your own papers, but will also enable you to critically consume published writing.

Odds and Ends

- Before you ask anyone to read your document, spend several hours or more reading through it purely to copy edit. Spell check and eliminate basic grammatical errors. Use proper capitalization and punctuation. Each word in section and subsection headers should be capitalized. Don't use \citet when you mean to use \citep for a BibTeX command. Signaling that you take your work seriously is crucially important for others to take your work seriously. A handful of typos in drafts is a fact of life, but consistent bad grammar distracts the reader and will undermine the quality of feedback you receive. You want feedback you receive on your document to concentrate on the scientific merit of your argument and evidence, not on writing. I also encourage students to swap papers with each other for feedback.

- Related, invest effort into sentence construction. Poorly constructed sentences are, implicitly, typos. This includes writing sentences with an active rather than passive voice. Instead of "I was intrigued by the writing document," write: "The writing document intrigued me." This website provides more examples and advice.

- Double-space (or at least, 1.5) and do not use a tiny font size (11pt in LaTeX is standard, 12 in Word). My eyes have deteriorated considerably since I began grad school. Please do not contribute to their further demise.

- Justified text alignment signals professionalism. Left-aligned text does not.

- Always include page numbers. I have a semi-funny story about this if you are curious.

- Number your sections and subsections in drafts. Most political science journals do not do this, for reasons I do not understand, but it greatly aids the clarity and organization of the paper.

- Use abbreviations and acronyms sparingly. Ones such as the UN, NATO, and the U.S. are fine because these are standard. Others, such as GATT, are standard enough that you can use

them, but make sure to spell it out the first time you use it, for example, "This paper argues that the General Agreement on Tariffs and Trade (GATT) was the greatest accomplishment in world history." Occasionally, you will need to introduce acronyms of your own (gulp), but use this power sparingly. Note that the hypotheses I stated above (Hypotheses 1 through 3) use acronyms I introduced in that paper. I didn't want to, but the individual terms are unwieldy (e.g., SLPCS is stateless ethnic group in a country that contains at least one ethnic group that had a pre-colonial state; and yes, there is a theoretical rationale for why that matters!). But to ensure that the acronyms were clear and that the reader wouldn't forget them, after spelling them out, I even added a figure simply to highlight the different terms!

Figure 2: Acronym Examples
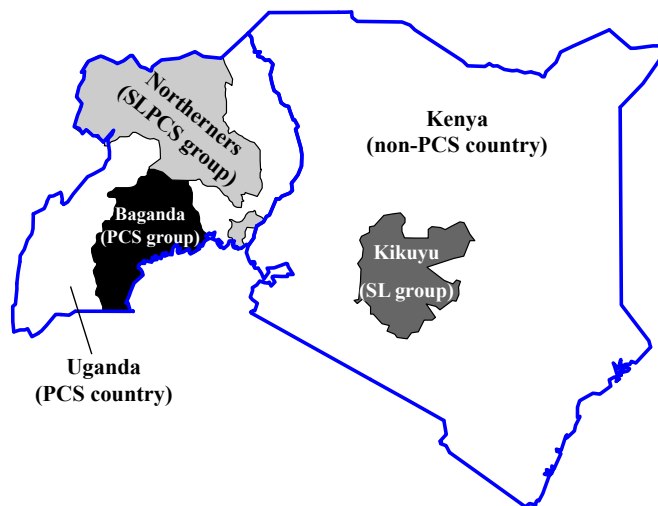
- Don't use exclamation marks!

- Don't use contractions if it's a serious piece of writing. And if it's not a serious piece of writing, then why should anyone bother to read it?

- Do not use semi-colons, either, unless you are separating elements of a list. From Kurt Vonnegut: "Here is a lesson in creative writing. First rule: Do not use semicolons. They are transvestite hermaphrodites representing absolutely nothing. All they do is show you've been to college."

- Do not end sentences with prepositions. In a variant of a Winston Churchill quote: "Ending a sentence with a preposition is something up with which I will not put."

- For graduate students: Use LaTeX to signal competence. Although I will read documents not written in LaTeX, I will encourage you to switch to LaTeX. (And yes, I realize that writing LaTeX instead of LaTeX is very pretentious.) If you don't want people to take your work seriously, then you should consider Microsoft Word, typewriter, written notes, or interpretive dance.

- Do not obsess over making the perfect game tree or other figures using LaTeX packages, especially in earlier stages of the paper. This is almost never the best use of your time. PowerPoint enables perfectly proficient figures in much less time. Your time is better spent, for example, editing your abstract and intro! (However, do make sure to clearly label all elements of the figure in large enough font.)

- (Do not contain sentences in parentheses in a serious document. Such comments should tend to go into footnotes, although be judicious with footnotes as well.)

A   Appendix

The appendix typically contains additional data description, additional regression tables, proofs for formal models, and perhaps entire written sections that didn't make the cut as the best 10,000 or 12,000 words in the paper. Recall the importance of only having a handful of tables and figures in the body of the paper that convey the main results. However, many papers contain additional robustness checks for which the regression tables should appear in the appendix.