POLS2044—WEEK 2—THEORIES & CAUSALITY

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In Week 2 we are focusing on theoretical approaches to explaining causality in the political sphere, which is a fancy way of saying that we are building on Week 1's discussion of the scientific method and the ways we can use it to better conduct political science research.

My goals for Week 2:

1. Continue the discussion of the scientific study of political processes.
2. Drill down on one part of this process—developing causal theories of politics
    a. What are they?
    b. What makes a good causal theory?
    c. How can we come up with good theories?
3. Discuss and apply these ideas in Week 2's tutorial.
4. Plan your Week 3 problem statement/research proposal.
5. Answer any remaining questions you might have about the class.

I. Reading notes and questions

There are three readings for this week. They are all from published books and are available as PDFs on the course website under "Week 2." In Week 3 and afterwards, you will start reading journal articles that you will download from the ANU library's website. I will make a quick video as soon as I can on how to access articles in this way for students who may be unfamiliar with the process.

All three readings speak to the challenges and opportunities when focusing on developing causal theories and asking productive and interesting research questions. While they may seem general at points, the issues they raise and the suggestions they include are vital to read and understand for both this and future classes (and, dare I say, life).

Abbott (2004) Ch 7 "Ideas and Puzzles"

This is the final chapter in an interesting book on how to develop new research questions and theoretical ideas. Hopefully, this brief chapter helps you think about your own research process and think about how this chapter might apply when reading or hearing about others research.

Several questions to keep in mind while reading this chapter:

- Have you ever felt like you have "nothing new to say" as in Abbott (2012)? This is one of the most common feelings I have heard from undergraduates as they try and narrow down their research question. You are not alone!
- Why is it important to phrase theoretical ideas in a way that they can be wrong? This is at the heart of our focus on the falsifiability of causal theories.
- Why is it important to consider alternate explanations to your causal explanation?

- Why is it important to try out ideas on other people (hint, you will be doing this in this week's tutorial)?
- Why are definitional differences one of the first places to look when addressing others' misunderstanding your argument?
- What is the "taxi-driver test" and why is it an important test of understanding?
- Why is it important to focus on pushing only one convention per paper?
- How do we develop a good taste in ideas?
- Do you know your intellectual personality?

Elster (1989) Ch 1 "Mechanisms"

This brief introduction to causal mechanisms describes how Jon Elster places theoretical explanation through causal mechanisms at the heart of his book on the nuts and bolts of social science.

Several questions to keep in mind while reading this chapter:

- Why does correlation between two things (e.g., Nicholas Cage movies and people drowning in pools) does not necessarily imply a causal link between them?
- Why is it important to think about the potential importance of third factors?
- Why is it important to be careful when concentrating on a particular mechanism rather than others?
- Why is it important to distinguish between causal explanations and storytelling and causal explanations and prediction?

King, Keohane, and Verba (KKV, 1994) Ch1 "The Science in Social Science"

I have saved the longest (and arguably most influential) chapter for last. This 1994 book was hugely important in shaping debates about causal inference over the last 25 years. In my experience, however, this book is read more frequently in classes organized by quantitatively trained researchers rather than those trained in qualitative methods, which is unfortunate if not entirely surprising. KKV's main point is that while the qualitative and quantitative methods we will discuss in this class may appear orthogonal (a fancy way of saying going in very different directions) to each other, they rely on a shared logic of causal inference.

Several questions to keep in mind while reading this chapter:

- What important issues do they sidestep in this book by focusing on empirical research (p. 6)?
- Why is it important to report our uncertainty?
- The authors describe four characteristics of scientific research. What are they (p. 7-9)
- Why do causal theories involve generalization?
- The two sections "Improving Research Questions" and "Improving Theory" are must-reads. Please pay particular importance to them, as reading and understanding their recommendations will make your lives much easier this term. What connections can you make between the elements outlined here and in the previous two readings?

II. LECTURE

Monday 1 August 2022, 1:05-2:55pm

Make sure you are going to the right Robertson lecture theatre. Here is a map with photos of the entrances (https://studentvip.com.au/anu/main/maps/145213). My goal is to make in-person attendance as interesting and rewarding as possible for students who do show up. As mentioned above, please make sure to bring a mask. Students without masks will be asked to leave. The positive COVID case from last week underscores the importance of being careful.

LECTURE PART 1: Week 1 recap

Scientific method

A reiteration of the graph we talked about last week. The linear process here is a simplification of reality and can make it seem like the process is more clear-cut and one directional than it is often in practice. In many ways these steps can occur simultaneously or in the opposite direction. All we see in published work is the final cleaned product, so I want to stress that the reality which you are likely to face is normal and much messier.

KKV's (1994) characteristics of scientific research

Some important parts from one of this week's readings.

1. The goal is inference.
2. The procedures are public.
3. The conclusions are uncertain.
4. The content is the method not the subject matter.

Often the scaffolding of intellectual buildings is taken down after being built.

Today's motivating question

What makes for a "good" theory?

Put differently…

What do good theories do?

Today I want to focus on an element of research design that gets insufficient attention in many research design classes—theory development. This process motivates the rest of our research, but it can be one of the hardest to constructively design. Where do good ideas and theories come from? What if we think we have nothing to say? Today I want to try and provide some helpful tips and guidelines for developing theoretical models.

LECTURE PART 2: Theory development

In this section, I highlight several ways to develop solid and interesting research questions and theories to answer them.

10 ways to develop promising causal theories

1. Offer an answer to an interesting, important research question.
2. Solve an interesting puzzle.
3. Identify interesting variation (across time or space)
4. Move from a specific event to more general theories
5. Drop the proper nouns
6. Use a new Y
7. Use a new X
8. Add a new Z
9. Use the literature and contribute to it.
10. Make sure the theory can be disproven.

Let us go through each one in turn.

1. Motivating research question

What questions do you have about the world? No one has your lived experiences and unique combination of skills. What do you bring to the table? What questions do you have that have motivated previous study or that you were looking for an opportunity to pursue?

For example, I really enjoy being outdoors and climb mountains to get what John Muir called their "good tidings". So, for one of my first international relations classes in my Master's degree, I thought about trying to use my interests in a way that I had not seen used before. I had read many books about the early expeditions to try and find and climb the world's highest mountains. I remembered how these expeditions were often funded and supported by their members' governments, and successes on these expeditions were huge public relations coups back home. I also remembered that this was an era shortly after the peak years of the "Great Game" between Russia and the United Kingdom to maximize influence and access to the countries between Russia to the north and the British colonies in South Asia. So I wrote a paper I am still proud of regarding the international relations of Everest expeditions leading up to the first successful assent in 1953.

Why do people get struck by lightning?

The difficulty when you have an idea is considering alternate explanations. For example, why are people struck by lightning? The obvious answer (as the Elster and Abbott readings talk about) is the proximate cause—the lightning being in the area. What might also be relevant are other factors. If we were trying to explain one example, maybe it is because the person was Benjamin Franklin and he was flying a kite in a thunderstorm trying to get lightening to hit a key on the kite. Or perhaps the person had a death wish and had wrapped themselves in aluminium foil and was holding two hiking sticks to the sky on the top of the Telstra tower. Trying to come up with a question and the answers that come from them require some knowledge and context about the outcome under explanation.

Who killed Mr. Boddy?

Many people who write about research methods and theory development connect their approaches to that of a murder mystery, often from Doyle's Sherlock Holmes ("The Adventure of Silver Blaze" is an oft cited classic) series of stories.

However, as a child of the 1980s, my favourite mystery movie is that of the black comedy "Clue" (1985). Each person in a spooky house had a motive, the means, and the opportunity to commit the crime. We can think about explaining political outcomes the same way. Motives are clearly transferrable. The means would be either the power, money, or time (or something else you think of) to commit the outcome. The opportunity connects more to institutional arguments for political outcomes or the lack of prohibitive opportunity costs to doing so.

Asking an interesting question

Here are some of the causal responses that you submitted during last week's lecture. They touch on several relevant topics and are easy to connect to some interesting research questions.

2. Find an interesting puzzle.

For example, here are a few that have been quite influential in their relative subfields.

Democracies do not fight one another.
Suicide terrorism occurs despite expected utility models.
The chance of one vote mattering is very small, still people vote.

Zinnes' (1980) puzzles

- Do nations interact?
- Why are some nations war prone?
- Is polarisation a precondition for war?

3. Find some interesting cross-sectional variation

For example, why do some countries spend more on their military than others

2020 map of absolute military spending using SIPRI data.

You can look at the same thing in several different ways. Here are two further maps that may lead you in different directions. Here is one where the military spending is measured as a percentage of GDP. Here, the US is far less of an outlier and Saudi Arabia looks much redder. Or you could look at it on a per capita basis. Here Australia and New Zealand are much darker.

3. Find some interesting over-time (time series) variation

Or you could look at how something you care about varies over time. Here are two examples over different time frames—Boris Johnson and Anthony Albanese's approval over time.

4. Moving from specific to general

Often, we have a particular interest in a particular event—the storming of the beaches of Normandy or Gallipoli, 9/11, the signing of the Munich Agreement. Another approach to developing a theoretical question and approach is asking whether what happened in one specific event has any other parallels or broader meaning.

Connecting to this picture of Neville Chamberlain, appeasement failed to prevent WWII, but maybe it is more effective more broadly.

5. Remove proper nouns

Another similar approach is whether one event is generalizable. Instead of studying why Scott Morrison's government lost the recent election, you could ask why incumbent governments win or lose elections.

6. Use a new outcome variable (Y)

Another approach is to use an existing theory on a new outcome. For example, in these two articles, I first generated new data on human trafficking. Then (with a friend) I used this outcome to analyse whether existing theories of human rights neighbourhoods (countries in the same geographic region often have similar human rights practices). We also applied the waterbed theory of neighbourhood crime patterns—if you crack down on crime in one area, the rational criminal will move to a nearby area with less law enforcement.

7. Use a new explanatory variable (X)

This approach is a bit easier than finding an entirely new outcome to pursue. For example, in this article a friend and I look at all recent research on voter turnout to see what types of variables were included and which had the most robust relationship with turnout. Several had been used in minor case studies but were robust to a global analysis.

8. Add a mediating factor (Z) into the mix

As you have probably gotten the sense of by now, the world is a very complex place, and a fundamental part of the theoretical process is abstracting away from the process and simplifying reality. However, this abstraction can often miss something important, like an interactive effect between explanatory factors (X).

For example, see this paper I wrote with my dissertation advisor. We were looking at how economic crises can lead to violence, up to and including civil war. I was writing a dissertation on how non-traditional economic flows like remittances, private aid, and microfinance loans might be large enough to help smooth over difficult times. This paper shows how remittances increase during economic crises which significantly decrease the risk of conflict.

9. Use the literature and contribute to it

Yet another way to develop research questions and causal theories is to look at what research has already been done. Like Isaac Newton, we are standing on the shoulders of the giants who have come before.

This can be done in several ways. First, like the figure on the right, you can look at influential previous research. What is influential? It can be either influential on your own thinking about an issue, or influential according to some external metric. Here the most common is citation counts. You could see what is shaping debates over time, what kinds of research is being done by people who land jobs or get conference awards, or what keywords are being used (e.g., using Google Trends). During lockdown, I had to produce a lot of recorded lectures, and I used YouTube to help me figure out how to record videos. During this YouTube spiral I learned that many influential creators used internal (and external) tools to see what search terms or what videos were popular. You can do something similar with academic research using tools like Google Scholar or Web of Science or some amazing work by researchers like Cullen Hendrix on what gets cited and how often work gets cited on average.

Building on the literature

Several additional questions you can ask when looking at published research:

What causes might be missed/overlooked?
Can theories be used elsewhere?
What are future implications?
Does it apply at a different unit of analysis?

10. Be open to being wrong

As hopefully the readings this week made clear, it is crucial to frame your questions and theories in a way that can be proven wrong. If not, the argument is tautological. It also links to Elster's discussion of storytelling. Stories are interesting, but it can be hard to tell the difference between them.

Summary slide for this section

Enough said.

LECTURE PART 3: Causality

In this section we focus on the causal part of causal theories. How can we determine why X causes Y?

Democretius (c. 460-370 BCE)

"I would rather discover one causal law than be King of Persia." (Quoted in Kellstedt & Whitten (2018: 56)

Best known today for formulating an atomic theory of the universe.

Simplifying reality

Simplifying reality is what we must do every day to be able to survive. However, sometimes complexity and novelty can help push us into new ways of thinking. For example, there is evidence that travel can shape the development of our brains.

(https://www.theguardian.com/education/2016/jan/18/travel-broadens-the-mind-but-can-it-alter-the-brain).

When we simplify, we often narrow the focus to the types of bivariate relationships (X ->Y) we discussed above. However, sometimes there are limits to the simplicity and it is useful to think about limited multivariate relations (e.g., remittances * crises = less war).

When we simplify and make our causal theories it is with the recognition that our social world is probabilistic rather than deterministic. Just because incumbents are less likely to win with low pre-election job approval ratings does not mean that they cannot win the next election. Unlike formal theory, maths, or some hard sciences, we operate with innate uncertainty.

Four hurdles to establishing causality

When we think about causal arguments (our own or others), it is important to evaluate them according to the following hurdles:

1. Is there a credible mechanism connecting X and Y?
2. Can we rule out Y causing X (endogeneity)?
3. Is there covariation between X and Y?
4. Have we controlled for potential spuriousness (Z)?

2019 Westminster dog show example video

https://youtu.be/qFNurioWZZY

Hurdle 1: A mechanism connecting X & Y

The "how" and "why" questions we focus on in this class
    Elster's (1989) "causal mechanisms"
The mechanism must be credible/plausible.
    Alien abduction and dead grandmothers require more supporting evidence to be considered plausible.

Example: Drownings and Nick Cage movies

Example: Arcade revenue and computer science PhDs

Example: Get-out-the-vote efforts and voter turnout in Brazil

Hurdle 2: Is it possible that Y causes X?

This hurdle can often be harder to pass over, especially in social sciences. Does economic growth cause democracy or does democracy cause economic growth? Or this paper by Fjelde and Smidt (2022), peacekeeping may cause less violence, but it is also possible that violent areas attract more peacekeepers.

Hurdle 3: Covariation between X and Y

Do the variables covary? In other words, as one variable changes is the other variable changing? Here the example is democracy and GDP. There is clearly covariation in this figure. It is also possible that the variation may be hidden because of the counfounding effects of another variable. For instance, remittances and civil war may not seem to covary until you take in the effects of economic crises.

Hurdle 4: Have we controlled for potential spuriousness (Z)?

Is there some other factor that is causing both the outcome and the explanatory factor? For instance, educational attainment and election violence. Can you think of some variable that can increase the probability of both X and Y?

Example #1: happiness and democracy

1. A credible mechanism connecting X and Y?
2. Can we rule out Y causing X (endogeneity)?
3. Is there covariation between X and Y?
4. Have we controlled for potential spuriousness (Z)?

Example #2: Jobkeeper —> more jobs kept

1. A credible mechanism connecting X and Y?
2. Can we rule out Y causing X (endogeneity)?
3. Is there covariation between X and Y?
4. Have we controlled for potential spuriousness (Z)?

Example #3: Height —> electoral success

1. A credible mechanism connecting X and Y?
2. Can we rule out Y causing X (endogeneity)?
3. Is there covariation between X and Y?
4. Have we controlled for potential spuriousness (Z)?

Example #4: Chocolate—>good health

1. A credible mechanism connecting X and Y?
2. Can we rule out Y causing X (endogeneity)?
3. Is there covariation between X and Y?
4. Have we controlled for potential spuriousness (Z)?

Causality summary

Determining causality is as much art as science.

It is an effort at simplifying reality in order to uncover an otherwise hidden truth.

It requires thinking deeply about your causal mechanism and considering alternate mechanisms that may be in play.

The strength of any causal mechanisms depends on considerations of plausibility, endogeneity risk, important covariation, and spuriousness risk.

Underlying assumptions are crucial to recognise and consider.

LECTURE PART 4: Developing Good Ideas

How do we develop good ideas?

Here are nine ideas and benchmarks:

1. Intellectual taste
2. Personality
3. Our interests
4. Logic
5. Avoids relabelling
6. Stands the test of time
7. Can be described to others clearly and briefly.
8. Simplifies the world.
9. Learning from bad ideas

Steven Johnson (2010) video

https://youtu.be/NugRZGDbPFU

Mark Rober's (2015) TED talk is also worthwhile.

His main points: curiosity, hard work, and luck.

TED talk: https://youtu.be/L1kbrlZRDvU

Today's discussion recap slide

III. WEEK 2 TUTORIALS

Logistics: From 5 minutes past to 5 minutes to the hour. Be on time, as tutors will start at 5 past the hour. Also, make sure that you know where your tutorial room is. ANU Timetabling always has the most up-to-date information. There are six tutorials. Sign up for one if you have not done so already. There are only a few availabilities left. The *MyTimetable* website also makes it possible to keep an eye on other tutorials just in case a student moves or withdraws from a tutorial that is better for you.

Requirements: Make sure to bring a mask and a laptop (or other internet-connected device). Also be sure to have your readings (pdfs or printouts if you are old-school) for that week with your notes and questions on them (or in a separate document). This may be the first meeting, but I have designed it to be as engaging and action-packed as all subsequent weeks. Be aware that there may (read: will) not be enough charging ports for every student to plug in their computer at the same time. Tutorials are held in normal rooms, not computer labs.

In-person—There are no options for online tutorials as the university shifts back to normal teaching conditions as much as is possible. If you have a documented illness (including COVID) or a current EAP, please email your tutor as soon as possible. Only documented medical conditions will be noted as excusable absences. Tutors will then provide more information for ways to participate for the week you are unable to attend. The initial student survey suggests that many of you have time constraints including work commitments. I understand the difficulties this can create all too well. While participation is 10% of your final grade (and thus easy to write off for some), lectures, readings, and tutorial activities are designed to be integral to coming on this research design journey with us. It is like trying to fly a 90% operational aircraft. It might work for a while, but it is not likely to end terribly well. Deciding to fall behind (or neglect) regular participation and engagement with the course will likely have much more than a 10% effect on your final mark because you are less likely to understand the terms, techniques, and assumptions underlying the assessment and because you will have had less time to develop the skills to apply them.

TUTORIAL ACTIVITIES

Given that this is the first tutorial, the focus is on (1) introductions, (2) addressing initial questions and issues about the course, and (3) linking the reading and lecture material to students' own research interests.

For the items 2 and 3 below, students need to submit their responses BEFORE THE END of the tutorial they are enrolled in. This will be cross-referenced by tutors to the attendance sheet. Responses are marked out of three (3) points. 1=minimal & insufficient response; 2=a response that meets the brief; 3=a response that exceeds the brief by creatively or originally linking it to existing theories, readings, lectures, or tutorial discussion. Results will be made available within two weeks of the week in which the tutorial discussion occurred.

1. Tutor and student introductions

What is your name and what are you interested in (or have already) researched?

2. Students (on their own) should write down: (5 minutes)

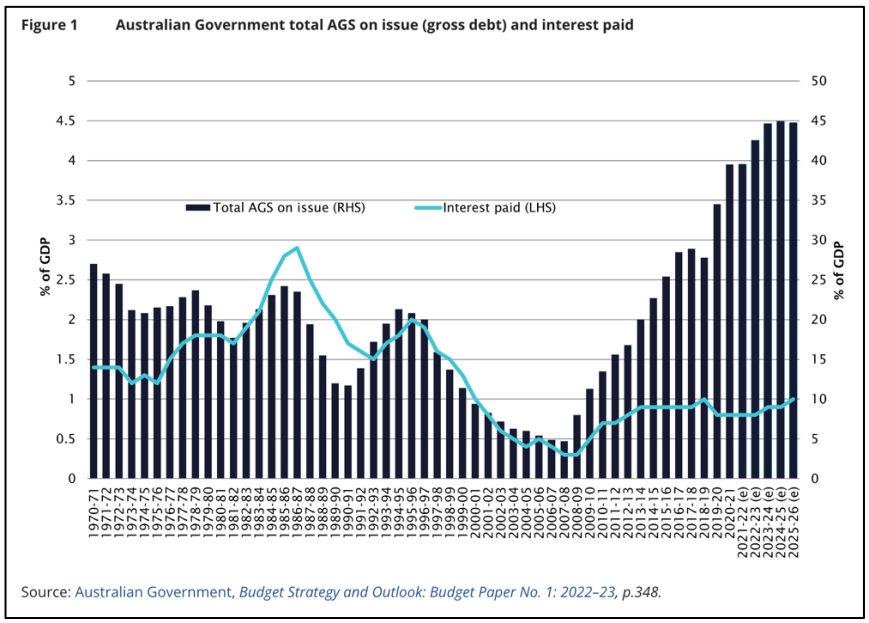
- One research question of interest to them
- One causal theory that answers (or may answer) this question
- All students should submit both their question and theory to "Wattle/Week 2/tutorial response to item 2."

3. Students should then present their efforts to another student (15 minutes).

- This student should listen then develop:
    - One strength of this approach
    - One question you have about this approach
- Then the roles reverse, and the presenter becomes the presentee.
- All students should submit their comments on another students' research (both at least one strength and one question) to "Wattle/Week 2/tutorial response to item 3."

4. As one tutorial group look at the graph below on Australian government debt over time (15 minutes).

- Come up with three (or more) potential causal explanations for the variation over time.
- Now use the link below (or search online) for a reputable source of comparable government debt across countries.
- Try and develop three (or more) causal explanations for the variation across countries.



Source: O'Brien, Gregory. 2022. "Australian government debt in historical and international perspective." Parliament of Australia. (https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BriefingBook47p/AustralianGovernmentDebt)

5. Questions about the problem statement due in Week 3. (250 words)

6. General questions about the course.