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7: Theory and causal inferences

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[Introduction to Qualitative Methods]

Schedule

Part 1: Theory and hypotheses

Part 2: Research question and research outline

What was a THEORY again … ?

Scientific theory

= explanation of a set or system of related observations or events based upon tested hypotheses and supported multiple times by independent researchers.

(a) One cannot create a theory but hypotheses

(b) Hypothesis cannot be proved or disproved; but only supported or not supported.

Theories should also fit additional observations that were not used in formulating the theories in the first place; that is, **theories should have predictive power**.

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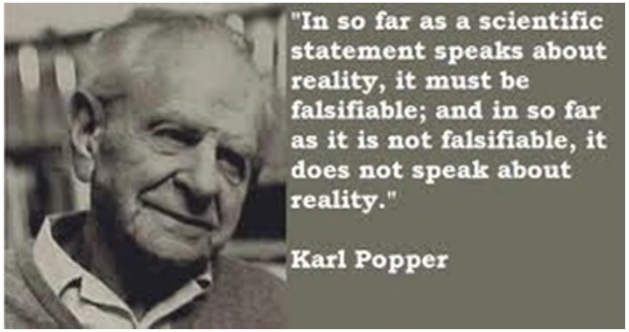
Falsifiability



A theory represents the best understanding of the explanations for a phenomenon at that point in time; it is still understood to be subject to future revision, or even to rejection.

Conclusion 1:

No empirical hypothesis, proposition, or theory can be considered scientific if it does not admit the possibility of a contrary case.

Example: The proposition *"all swans are white"* would be falsified by observing a black swan, which would in turn depend on there being a black swan somewhere in existence.

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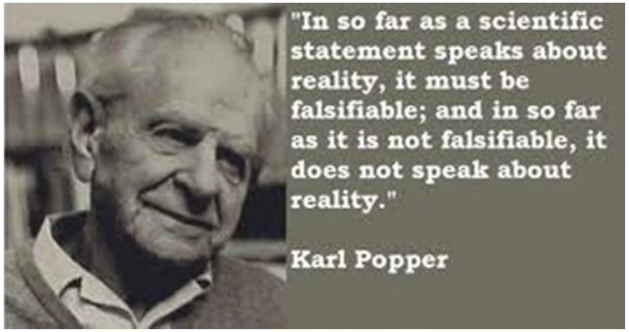
Falsifiability

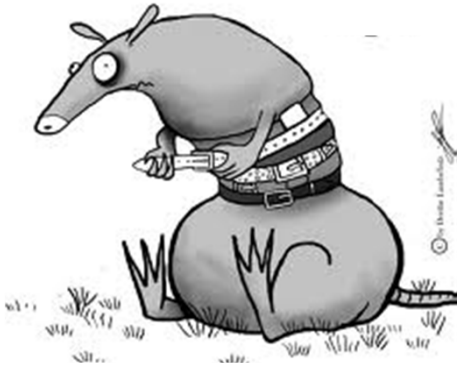


A theory represents the best understanding of the explanations for a phenomenon at that point in time; it is still understood to be subject to future revision, or even to rejection.

Conclusion 2:

Theories cannot be tested directly; they are tested through the test of the hypotheses on which they are built.

The weight of the disconfirmed hypotheses will become so great that it becomes unreasonable to support the base theory any longer, and a decision will be made to reject it.



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Hypotheses and problems

Research usually starts with a problem || Question and hypotheses provide a specific restatement and clarification of the problem || Research is an ongoing process of hypothesis generation, refutation, refinement, and testing

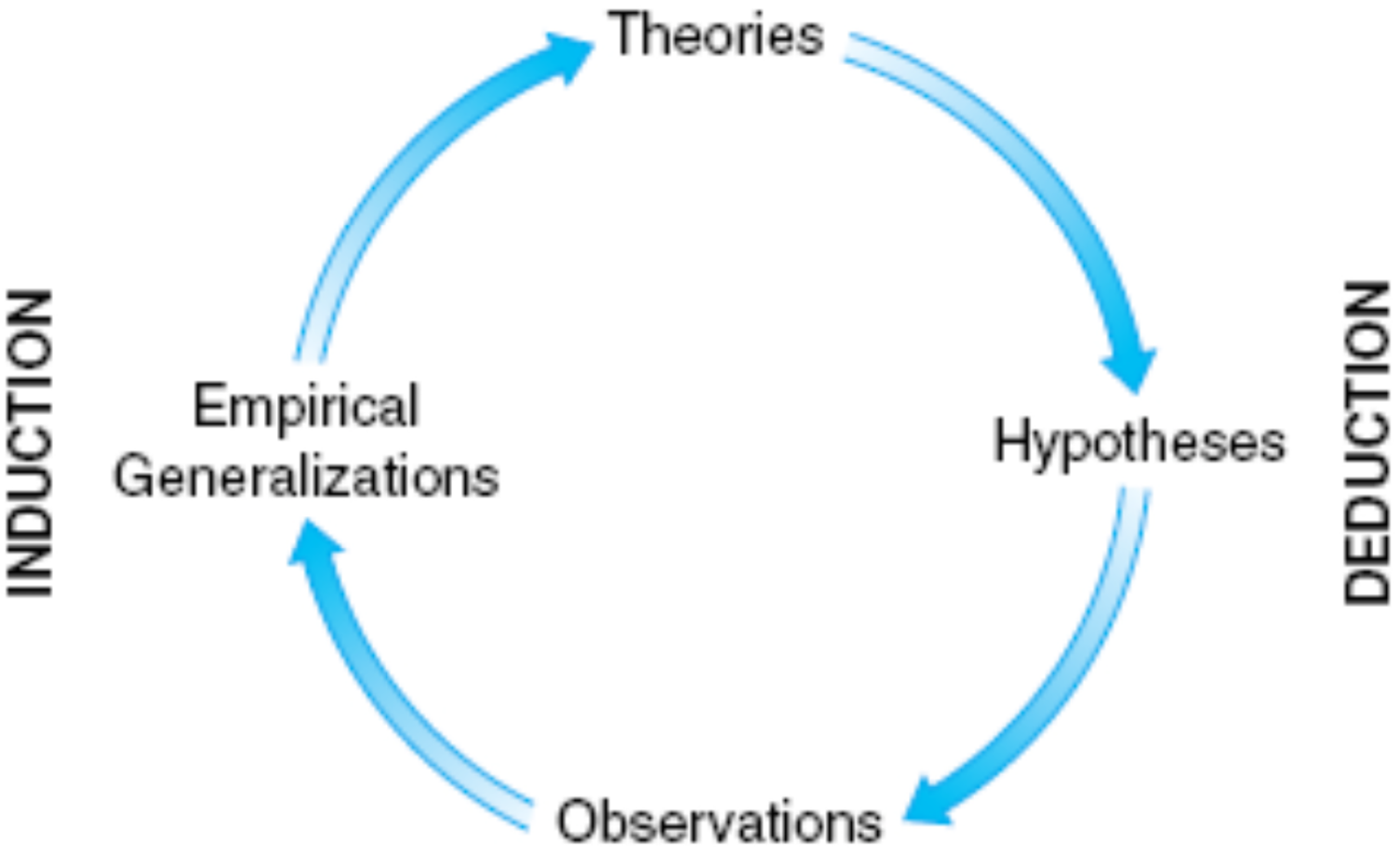
Problem is a question and is not testable	**Hypotheses** can be tested
Relation between variables in problem statements:	Relation between variables in hypotheses:
Is A related to B?	If A, then B.
How are A and B related to C?	If A & B then C.
How is A related to B under conditions C and D?	If A, then B under conditions C and D.

The usable hypothesis

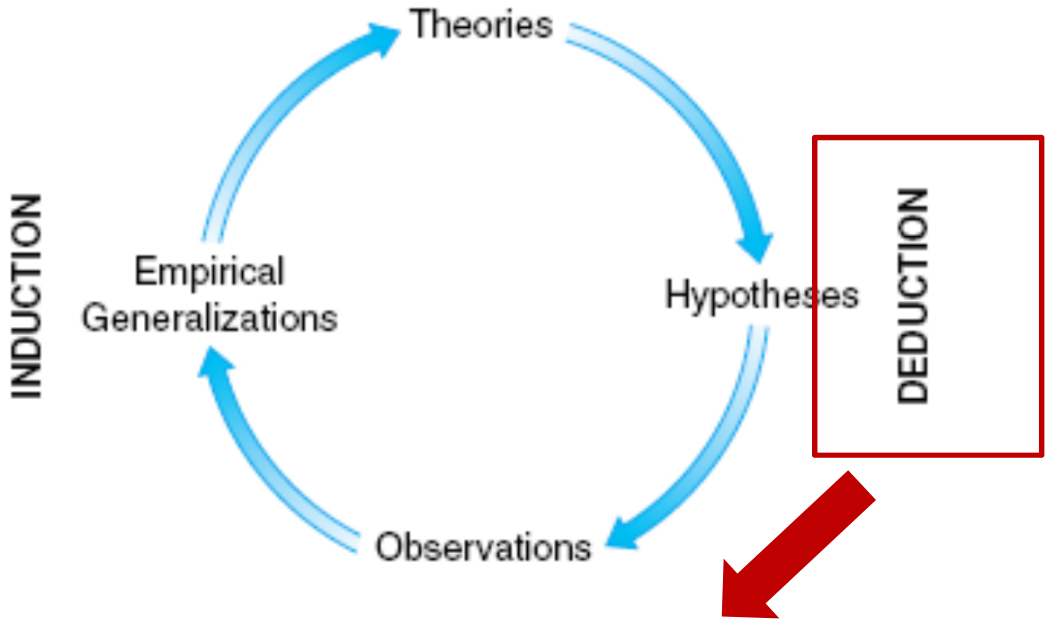
- It must have explanatory power.
- It must state the expected relationship between variables.
- It must be testable.
- It should be consistent with the existing body of knowledge.
- It should be stated as simply and concisely as possible.

Hypotheses generation

When I came to practice I was looking for answers like everybody else. For years I asked "what's the right answer?" Now I am learning "What is the right question?"

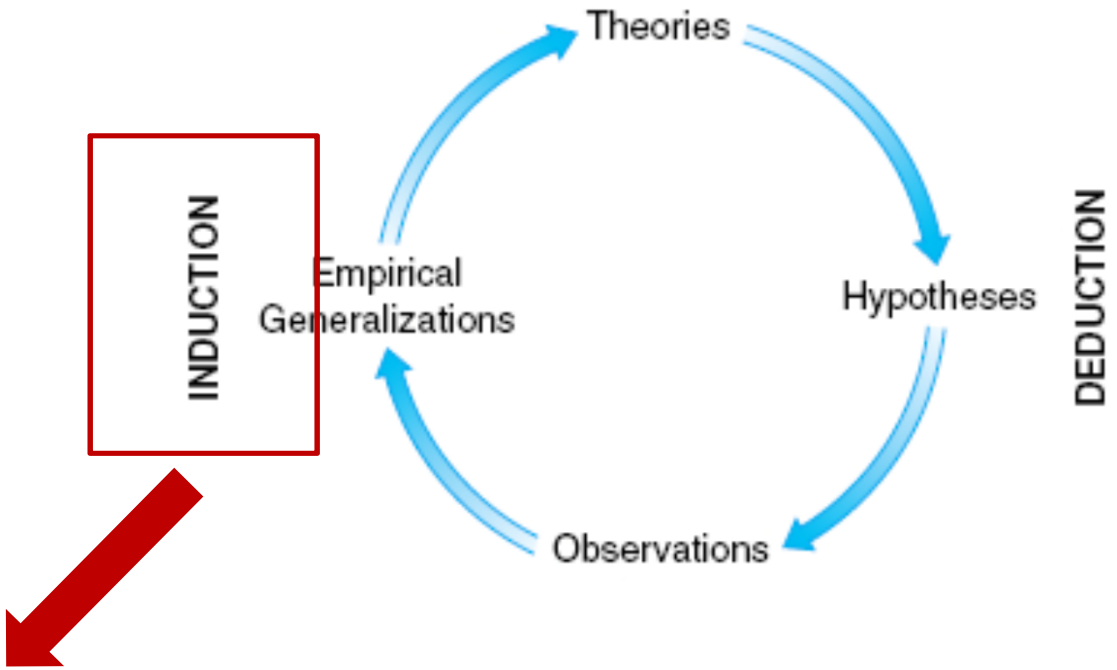


Inductive derivation



Researcher begins by selecting a theory, derives a hypothesis leading to deductions derived through logic. These deductions are then presented in the from of statements accompanied by an argument or a rationale for the particular proposition.

Inductive derivation



Researcher notes the observations of behaviour, thinks about the problem, turns to literature for clues, makes additional observations, derives probable relationships, and the hypothesizes an explanation. Hypothesis is then tested.

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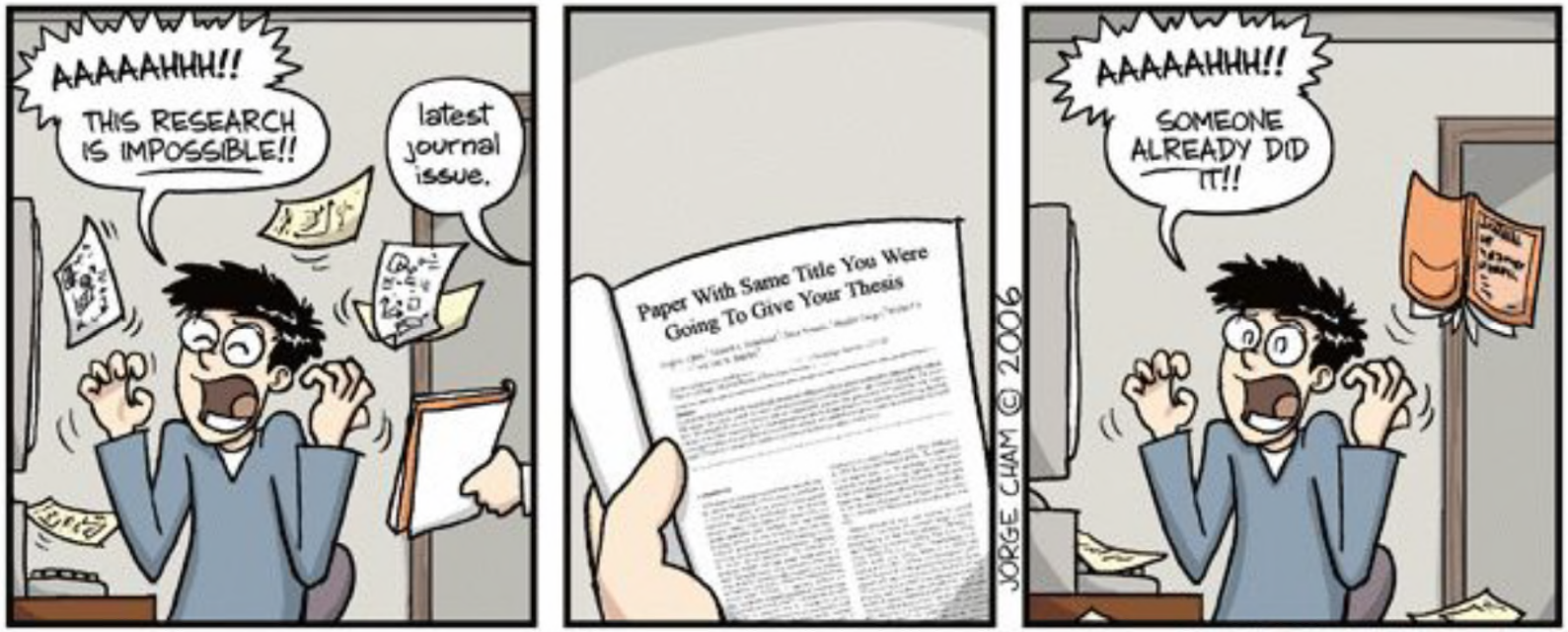
Developing a good research question



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Development of a good research question

Most important task
because research question influences everything:

- Theory to be applied
- Method to be used
- Data to be gathered
- Unit of analysis to be assessed
- etc.

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Characteristics of good research questions

1. **I'm interested in the question.**
2. **Others are interested in the question.**

→ Don't waste the reader's time!

→ How do I know what's interesting for others?

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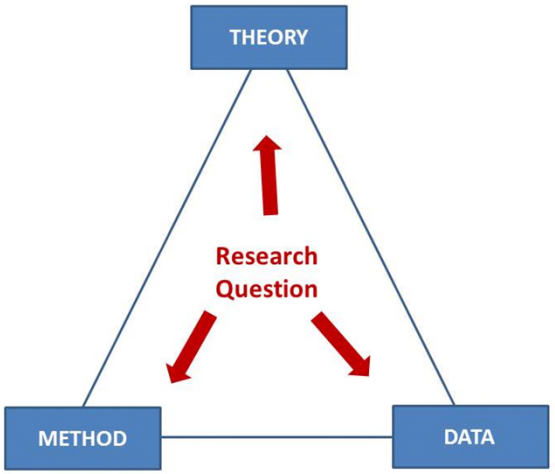
When is a question interesting for others?

✓**New question** (don't repeat research by finding obvious results)
✓**Impacts many different environments** (generalizability)
✓**High impact on theory and/or practice** (be aware of "So what?" reply)
✓**Links different [contradicting] theories** (advancement of science)
✓**Tries to explain causal relationships** (not just descriptive data)
✓**Tries to solve a paradox** (e.g. coopetition or knowledge revealing)
✓**Ends in unintuitive results** (e.g. contracting prior research)

→ A good research question fulfils one or more of these characteristics
→ Strong literature study is necessary
→ Question shouldn't be neither too broad or too narrow

http://www.livingreviews.org/
Review section, e.g. in APSR



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Research outline

(1) Research Question
(2) Motivation and relevance
(3) State of the art and contribution
(4) Theoretical argument & hypotheses
(5) Dependent, independent, and control variable
(6) Research design and approach
(7) Data and methodology
(8) Empirical expectations
(9) Challenges and questions

A User's Guide to Political Science
→ http://govthesis.site.wesleyan.edu/

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Next week: Causal inference

Part 1: *Small-N case studies* – comparative analysis

Caramani, D. (ed.) (2011) Comparative Politics. Oxford UP. Ch. 3 [Comparative research methods, H. Keman], p. 50-63.

Part 2: *Single case studies* – process-tracing & congruence analysis

Blatter, J. & T. Blume (2008) In Search of Co-variance, Causal Mechanisms or Congruence? Towards a Plural Understanding of Case Studies, in: Swiss Political Science Review 14(2): 315–56.