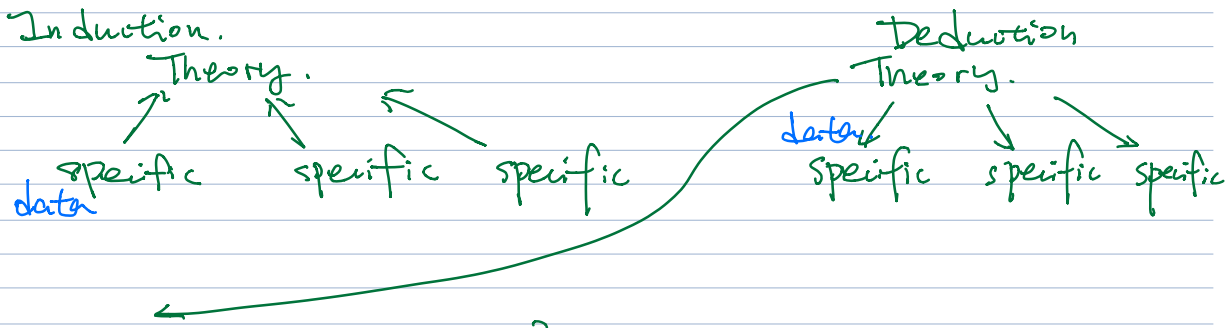
Learning Objectives

- Distinguish between causal identification and causal explanation
- Identify the types of relationships among exposures that comprise causal identification and causal explanation.
- Understand the components of elaborated causal theories
- Translate causal ideas into relationships among exposures
- Develop research hypotheses from causal theories
- Write a principled argument to support a causal theory.

Two Approaches of Causal Inference



How to develop theory?

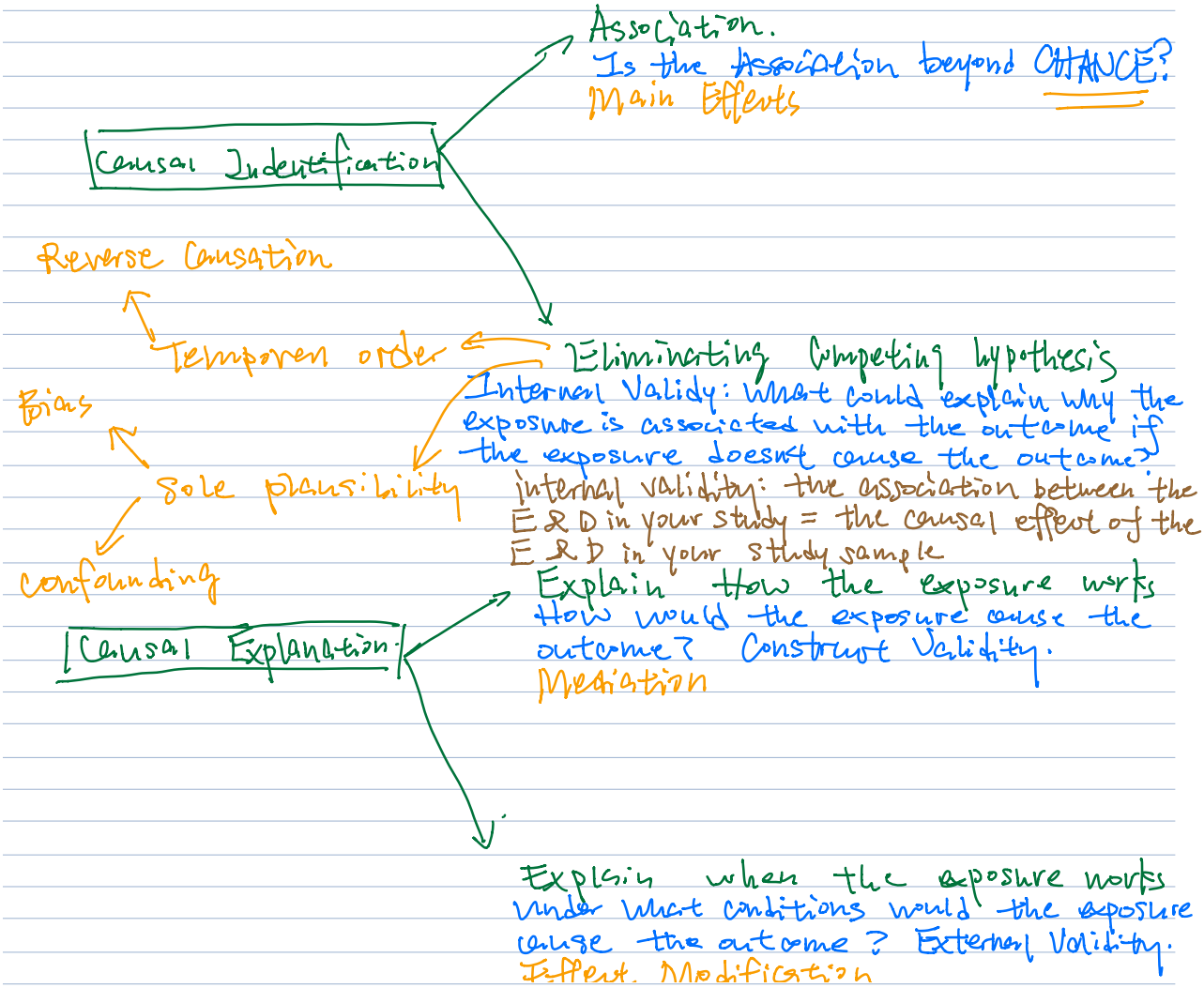
① Hill's causal criteria.

→ Conceptual considerations → Temporality.
- plausibility.
- Coherence.
- Analogy.

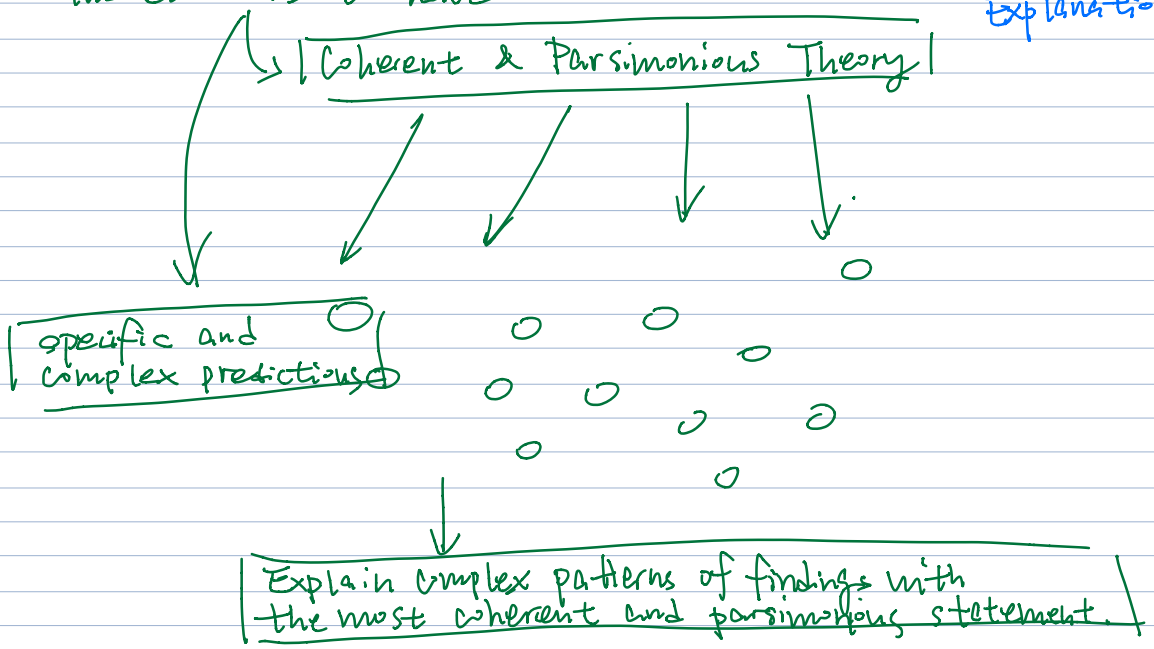
Evidence of theories → Consistency.
- Experimental evidence.

Evidence regarding specific corollaries → Strength
- Biologic gradient.
- Specificity

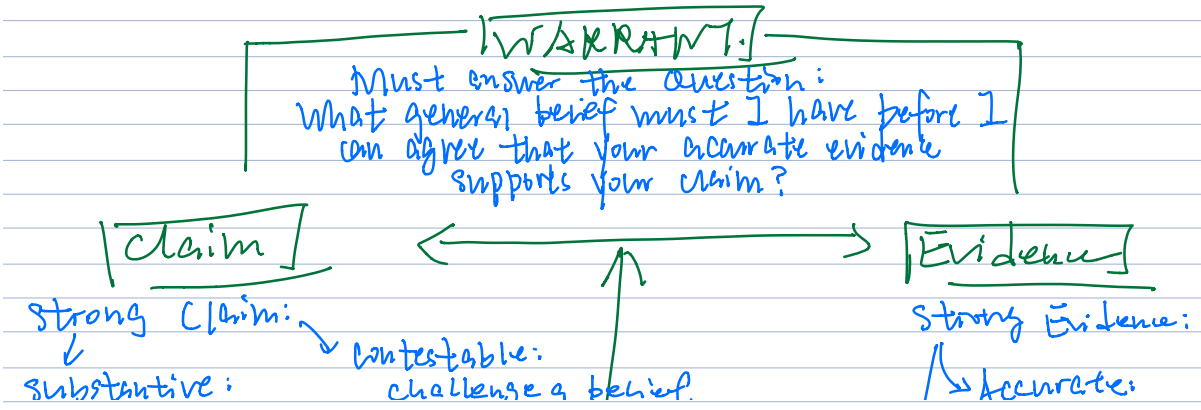
② Shadish, Cook & Campbell's Building Blocks of Causal Theories



② Falsificationist Approach. (Falible). (useful for causal Identification/ Explanation).



Elements of a principled Argument.



something important. something not thought about.

(3) No careless error
↳ fully recognize limitations of the evidence

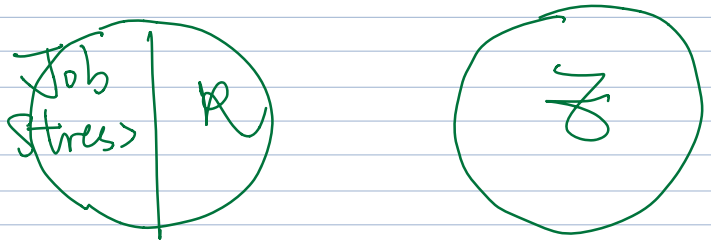
Qualification

Authoritative. what counts as evidence in Epi

Strong Qualification.

Without Qualifications
↳ Raise objections and alternatives you considered and rejected.
↳ Anticipate objections
↳ Anticipate alternatives

Concede what you cannot rebut.
↳ Stipulate limiting conditions
↳ Limit scope and certainty of your claim



- ↑ only people with Job stress
  RR – RD –
- ↑ Z only.
  RR ↓ RD ↓. RR = Risk in Exposed / Risk in Unexposed ↑
- ↓ R only.
  RR ↓ RD ↓.
- Job stress prevalence doesn't matter. RR –
  This is why we can over sample exposed people in cohort studies