

Introduction: Causal Inference and Research Questions

Cues to Causal Inference

- Covariation: causes should covary with effects
- Temporal order & contiguity: causes must precede effects; effects follow directly upon causes
- Necessity & sufficiency
 - Sufficiency: a cause can, by itself, produce an effect
 - if a, then b
 - Necessity: a cause must be present for an effect to take place
 - if not a, then not b
 - Necessary and sufficient: there is one and only cause for an effect
 - if and only if a, then b
 - Mackie's INUS theory: causal scenarios. A cause is an insufficient but necessary part of a scenario that is sufficient but not necessary for an event to take place.
- Causal frame: what is a cause and what is a condition?
 - Interaction effects: two (or more) variables interact to produce outcomes not predicted by simple addition of their independent effects

Cues to Causal Inference

- Manipulability: in order to test with certainty a hypothetical causal relationship, must be able to manipulate the putative cause to see if it produces the putative effect.
- Mechanism: confidence in a hypothetical causal relationship is enhanced if one can produce a plausible mechanical account for the causation.
- Determinism versus probabilism: in social science, usually infer a causal relationship if the likelihood of an effect in the presence of the cause exceeds the likelihood of an effect in the absence of the cause by some criterion.
- Levels of analysis: causes may be considered relatively proximate (e.g., physical activity) or distal (e.g., genetics, personality)
- Efficiency: Have we identified and isolated the most important causal agent?

Research Problems and Questions

- Sources
 - Everyday life
 - What motivates terrorists?
 - Practical problems
 - E.g., how do we get more people to vote?
 - Past literature
 - Contradictory findings
 - Contradictory theoretical accounts/explanations
 - Incomplete or unconvincing explanations
 - Extension to new situations, populations
- Independent variable focus
 - E.g., What is the impact of a dramatic historical event (e.g., the 9/11 attacks) on the political attitudes and behaviors of young adults?
- Dependent variable focus
 - E.g., What determines support for third-party candidates like Ralph Nader?
- Stating the research problem
 - Describe a relationship between variables
 - Express in the form of a question