**Preview Questions**

1. What are the principles of analytical design?
2. How were the principles of analytical design derived?

**Reading Summary**

* Show comparisons, contrasts, and differences which is the fundamental act in statistical reasoning.
* Show causality, mechanism, explanation, and systematic structure which are the fundamental intellectual tasks in the analysis of evidence.
* Show more than 1 or 2 variables (i.e., multivariate data) because reasoning about evidence should not be stuck in two dimensions.
* Completely integrate words, numbers, images, diagrams because they are all different forms of information.
  + Pre-specifying the information mode or explanatory method can cause misalignment of evidence relative to substantive matters.
  + Focus on “how something can be effectively explained” rather than “how one type of information or particular approach can be used to explain something.”
* Thoroughly describe the evidence through detailed documentation.
  + Facilitates assessment of credibility and potential bias.
* Analytical designs stand or fall on the quality, relevance, and integrity of their content.
  + The most effective way to improve a presentation is to obtain better content.
  + Design devices and gimmicks cannot save poor content.
  + Analytical design is a content-driven craft.
* Content comes first.
  + The purpose of analytical design is to assist thinking.
* Presentations should focus on assisting with the fundamental intellectual tasks:
  + Reasoning about evidence
  + Describing data
  + Making multivariate comparisons
  + Understanding causality
  + Integrating diverse evidence
  + Documenting the analysis
* The principles of analytical design are derived from the principles of analytical thinking.
* Unlike the physical sciences, empirical observations in social science are NOT always the expression of knowable invariant laws.
  + People can act on the basis of knowledge about patterns of human behavior and thereby modify those patterns.
* Presentations about human behavior are more descriptive and verbal and less visual and quantitative.
* Summary of social science knowledge:
  + Some do, some don’t.
  + The differences aren’t very great.
  + It’s more complicated than that.
* Causal ideas of human activities:
  + Intervention
  + Purpose
  + Responsibility
  + Consequence
  + Explanation
  + Intention
  + Action
  + Prevention
  + Diagnosis
  + Strategy
  + Decision
  + Influence
  + Planning
* The fundamental principles of analytical design are relevant for displays of evidence describing human behavior.