Quasi-Experimental Designs

Say goodbye to Factorial designs and ANOVAs
Move on to

Quasi-Experimental Designs

Case Studies
Naturalistic Observation
Interviews/Narratives/Focus Groups
Survey Research
Analyses: Chi Square, Correlations, Multiple regressions
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“Static” variables: Experimenter does not manipulate
Therefore all could be subject to unknown or unanticipated confounds
Cannot clearly isolate cause and effect
Defined in terms of correlations of associations
In an article, preferred description is the strength of the association
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**Case studies:** Useful as an example or to highlight some unusual circumstance
Problems: Not systematic, no comparison group

**Naturalistic Observation:** Useful in helping to guide future research, guiding/shaping theory
Problems: Unobtrusive? What behaviors should be observed? Validation of observed behaviors?
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Interviews/Narratives/Focus Groups

Can be useful as part of a program of research. People can talk about “meaning” and “importance”

Problems: Again, defining and validating behaviors
Deciding on specific behaviors/topics
Unobtrusiveness of moderator?
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Survey research: Complicated, so we will cover this on Wednesday

Analyses:
- Chi square
- Correlation
- Multiple regression
- Path analysis
- Structural Equation Modeling (SES)
- Odds Ratios, etc.
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Most important point to remember:

All measure the strength of association and cannot show cause/effect. Only a true experiment can show that.

Very useful as part of a program of research
Quasi-Experimental Designs

Survey research more than other type of research
Most often used,
Quasi-Experimental Designs

Survey research more than other type of research
Most often used,
Most often mishandled,
Quasi-Experimental Designs

Survey research more than other type of research
Most often used,
Most often mishandled,
Most often misunderstood,
Quasi-Experimental Designs

Survey research more than other type of research
Most often used,
Most often mishandled,
Most often misunderstood,
Most often manipulated
Quasi-Experimental Designs

Survey research
As with other quasi-experimental designs:
Measure “static” variables
   You do not manipulate, nature does
Examples?
Association between two or more variables
   is the best you can do
No cause/effect
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Why used?
Ease of use
Some variables cannot be manipulated
Helpful pre-experimental design

Several issues need to be attended to:
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Obtaining a representative sample
Effects of method of contact and assessment
Qualities of survey instrument itself
Threats to internal validity
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Obtaining a representative sample
Representative of what? Whom?
How do you find them?
How do you maximize participation?
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Effects of method of contact and assessment

Telephone
Letters (snail mail, e-mail)
Advertisement (Newspapers, flyers, web)
Word of mouth
Convenience sample

Assessment: Face to face? Oral/written?
  Telephone? Internet? Other?
By whom? What language?
How might these affect responses?
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- Qualities of survey instrument itself
- Avoid “homegrown” including altering an existing instrument as little as possible
- Look for instrument with good psychometric data and carefully assess and report your psychometric data
- Psychometric data: Reliability, validity, standardization
- Self-report vs. other report?
- Length? Reading level? Clarity? Scale used? Other qualities?
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• Developing a survey instrument
• Examples: Forced choice, dichotomous responses, Likert scale, nominal responses
• Question: How do the responses “group together”?
• Internal reliability
• Factor analysis
• Whole area of study in itself
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• Survey research:

• Threats to internal validity

• Selection
  • Example: DUI study men vs women
  • Berksen’s bias

• Mortality
  • Failure to complete or respond (e.g. rate of return)

• Selection X Mortality
  • Failure to complete at a differential rate
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• How to report in APA style
• Always report as an association
• Could be predictor but only if theoretically sound and use proper controls
• Correlations, multiple regressions etc. on Friday
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- Correlation
- Association between two variables
- Positive vs. Negative
- Effects of increase in number of participants
- Effects of large number of correlations with same data set (Bonferroni corrections)
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• Multiple Regression: How do a set of variables interact to predict criterion or outcome variable?
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Example: Predicting GPA

Predictor variables—
  Parental variables
  Past GPA
  Subject variables (e.g. age, sex)
  SES
  Other variables?

Independent and interactive contributions

Models (Equations)

Stepwise versus Hierarchical regression
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Logistical Regression: Criterion variable is dichotomous rather than continuous
Quasi-Experimental Designs

Logistical Regression: Criterion variable is dichotomous rather than continuous

Path analysis
  Theory: X leads to Y, Y leads to Z
Extension of Multiple regression techniques over time
Models (theory) reflect the time element
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Many types of Research designs beyond the scope of this course

Right now, reading and understanding research is the goal

To learn more, take more courses, get involved in research (DIS opportunities), read books and articles

Psychology is a research-based discipline