Review

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Review – A Science of Politics?

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How We Know

Science is a "systematic, controlled, empirical and critical investigation of hypothetical propositions about the presumed relations among various phenomena." *(Brians et al. 2011, p.4)*

- E.g., Clinical trials show high Vitamin D levels can reduce risk of getting some types of cancer;
- E.g., Survey research demonstrates Americans' willingness to raise taxes to maintain social programs;
- E.g., Interview and survey research shows married women with children have less free leisure time than married men with children.

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Why We Need to Know

- As political analysts and researchers, we need to gather information in order to:
  - Understand and participate in the evolution of knowledge in the discipline;
  - Critically distinguish logic from dogma, fact from fiction;
  - Develop theories that help to explain and predict political phenomena;
  - Make decisions about how to effectively resolve social and political problems.

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Types of Political Analysis

- Normative political analysis
  - Primarily concerned with values and ideals
  - Prescription of what should be done or avoided
- Empirical political analysis
  - Primarily concerned with describing and explaining political phenomena

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Models of Empirical Political Science

- Standard science model
  - Based on objective, observable phenomena that are studied using methods drawn from the physical sciences → 'positivist' epistemology
- Interpretive model
  - Holds that knowledge and explanation can only be derived from understanding values and beliefs which shape perceptions/ interpretations associated with particular behaviours → 'post-positivist' epistemology

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Scientific Model (Positivist/Empiricism)	**Interpretive Model (Post-positivist)**
Foundationalist ontology – world exists independent of our knowledge of it	Anti-foundationalist ontology – the world is socially constructed
Objectivity is possible	Objectivity is impossible (or limited): all 'observation' is subjective
Goal of research is to find cause-effect relationships, generate theories	Goal of research is to understand relationships, generate narratives about meanings
Regular relationships between phenomena can be established	Regular, predictable relationships do not exist: each is unique
Validity of theories based on repeated observations of those relationships	Validity of narratives based on consistency with experiences of study populations
Empirical questions (what is?) are separable from normative questions (what should be?)	Empirical and normative questions are inseparable

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Tenets of the Scientific Method

- Regularities
  - There are discoverable regularities, causes, effects.
- Verification based on observation
  - The validity of generalizations (theories) must be tested by reference to relevant, observable behaviour.
- Technique
  - Rigorous means for observing, recording, analyzing data.
- Replication
  - Scientific knowledge aspires to universal validity.

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- Progress
  - Scientific knowledge is cumulative.
- Values
  - Normative evaluation and empirical explanation involve very different kinds of propositions, and should be kept analytically distinct.
- Knowledge and advocacy
  - The understanding and explanation of political behaviour must logically precede applications of that understanding to the practical problems of society.

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Interpretive Method

- Goal is to discover the actor's own reasons for taking an action; the meaning he or she attaches to it that action
- Substance should precede technique: problems studied must be relevant to those being studied
  - Technique is not abandoned: rigorous research is both possible and desirable
  - Multiple methodologies available

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- Anti-foundationalist: there is limited objective reality
  - All social phenomena are subject to interpretation and have different meanings for different people
  - Meanings are socially constructed – both for the researcher and the subject of the research

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Types of Empirical Data

- Quantitative Data
  - Attempts to develop generalizations based on observations/analysis of large numbers of cases
    - E.g., survey research, data analysis, and content analysis.
- Qualitative Data
  - Attempts to develop deeper analysis based on detailed study of fewer cases
    - E.g., interviews, case studies, participant observation and other types of field research

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QUALITATIVE	QUANTITATIVE
Data are in form of words from documents, observations, transcripts, interviews.	Data are in form of numbers and precise measurements.
Theory is can be causal or non-causal, but is usually inductive.	**Theory** is usually causal and deductive.
Researcher usually develops hypotheses and themes after being immersed in data.	Researcher begins with hypothesis and test it using data.
Research **procedures** are particular to the setting and, though they must be described, exact replication is rare.	**Procedures** are standard (e.g., random sampling) so that they may be verified by replication.
Researcher has no or little control over interactions.	Researcher has some control over events and environment
Status characteristics of the researcher are highly relevant to the production of knowledge	**Status** characteristics of interviewer do not matter.

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QUALITATIVE	QUANTITATIVE
Analysis proceeds by extracting general patterns, themes from evidence, and organizing data to present a coherent, meaningful explanation of the problem.	Analysis proceeds using statistics, tables, charts and demonstrating whether data supports or refutes the hypotheses.
Findings usually represent a deep, thorough understanding of the social problem being studied, as the participants themselves understand it.	Validity of measures, ensuring that research findings capture some meaningful social reality, is often a problem.
Findings are limited to the few people being studied. Low generalizability.	Findings are broadly generalizable to a larger population.

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Argumentation

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Arguments in Political Analysis:

- "A public presentation (in writing or speech) of the assumptions, evidence, and train of reasoning through which we arrive at what seems like the best possible answer to a question." (Baxter-Moore et al. 1994:24)

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Types of Arguments

- Arguments based on causes
  - Idiopathic models of causation
  - Nomothetic models of causation
- Arguments that generalize
- Arguments by analogy

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Arguments Based on Causes

Idiopathic Models of Explanation

- Explanation through the enumeration of many reasons that lie behind a particular event or action.
- Criteria for validity of causal arguments depend on:
  - Credibility or believability of explanations;
  - Whether alternative explanations
    - i.e. "rival hypotheses" were seriously considered and found wanting.

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Nomothetic Models of Explanation

- Identify the most important factors in explaining a general class of actions or events;
  - Are probabilistic in their approach to causation.
- The causality relationship in a nomothetic study requires that:
  - The cause precede the effect.
  - Two variables be empirically correlated.
  - The observed empirical correlation can not be explained in terms of a third variable.

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Arguments Based on Generalization

Elements of Generalizations

- Major Premise (P)
  - The "warrant or authority for the conclusion to follow from evidence in the minor premise." (B-M et al., p. 27)
  - i.e., General law, principle, legal statute, theory, definition or rule of thumb
- Minor Premise (p)
  - Grounds or evidence for believing something is true
  - Based on a particular case or cases

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Arguments Using Generalization

- Inductive Argument:
  - Proceeds from specific case to make a general statement
  - Lacks certainty, but assumes that the specific case(s) is representative of the general class of cases
- Deductive Argument:
  - Proceeds from general (law, theory) to the specific case
  - Based on absolute certainty

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Generalizations Based on Representative Evidence

- Generalizations based on limited evidence require a representative sample of cases or evidence;
- Usually a randomly selected sample
- Random selection:
  - A method of selection where each element or case has an equal opportunity to be selected for study

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Generalizations Based on Appropriate Evidence

- Carefully selected, but not random, case can powerfully illustrate a major premise
  - Need to demonstrate – give reasons – why the case is relevant and adequate

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Arguments by Analogy

- Similarities between two different things are used as support for a conclusion about another similarity
  - Tend to be selective, incomplete
  - Overlook important differences
  - Tend to be used rhetorically

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Designing Research

What, Why and How

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Designing Research

1. *What* are you going to study?
2. *Why* are you going to study this?
3. *How* are you going to do the study?

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1. Determining *What* to Study:

- Identify and select a problem
  - State the problem as:
    - A hypothesis or
    - An objective
- Define the main concepts, identify key variables

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The Hypothesis

- Typically used with explanatory research
- Asserts a (causal/quasi-causal) relationship between two concepts
  - Positivist epistemology

Observation: Social media seems to have a more prominent role in elections these days.

Hypothesis: Social media helps politicians to engage young people.

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- Characteristics of a hypothesis:
  - States a relationship between variables
  - States the direction of the relationship if possible
  - States a comparison between values of the independent variable
  - Is empirically testable

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- Independent variable (IV)
  - The measure used as the proposed causal influence in a relationship between two measures
- Dependent variable (DV)
  - The outcome event or the event to be explained in a research project
  - The research hypothesis is that an independent variable or variables act on or effect the dependent variable

Democracies tend not to initiate wars.
- IV → Democracy

Countries with high per capita incomes are more likely to be democracies
- DV → Democracy

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The Research Objective

- Use for research that is not concerned with identifying causal relationships:
  - Exploratory or descriptive research
  - Interpretist epistemology

Observation: Social media seems to have a more prominent role in elections today.

Research Objective: To discover and describe the ways in which election campaigns use social media to each out to voters.

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Concepts and Variables

- Concepts
  - A label that is given to a category or class of phenomena that have something in common
- Variables
  - Variables are the empirical referents of concepts;
  - The observable characteristics of phenomena that can take on more than one value (categories)

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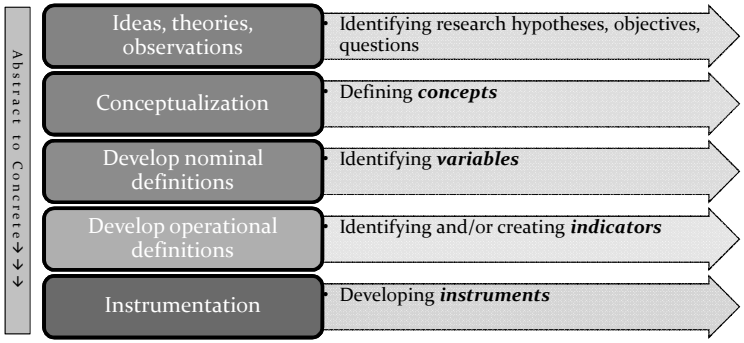
From Concept to Measurement



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Nominal Definitions

- A definition which represents a consensus or convention about how a particular term is to be used
  - Similar to a dictionary definition
    - E.g., Political Alienation: "The general feeling that government is no longer of the people, by the people, for the people."

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Operational Definitions

- An operational definition specifies precisely how a concept or variable will be measured
  - It specifies what will be observed
  - It specifies how that observation will be made
  - It specifies how that observation be interpreted

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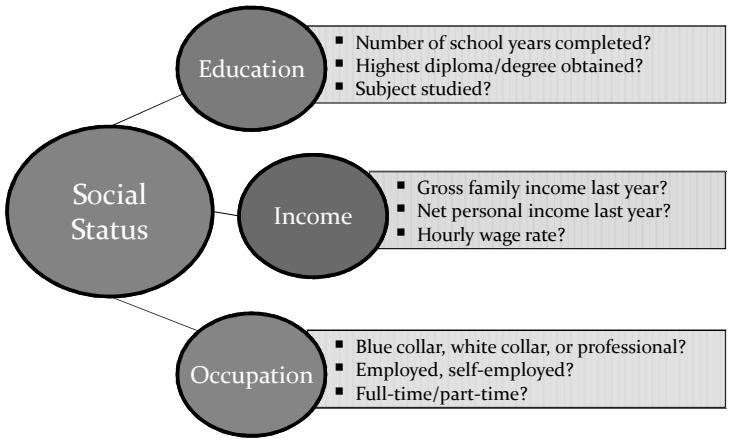

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2. Why the Research Should Be Done

- Purpose of the research
  - Exploratory
  - Descriptive
  - Explanatory
- Establish the logical basis of the research
  - Relevance of the issue/problem
    - why is it worth studying
  - Literature review

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3. How the Research Will be Done

A. Identify the sample
   - Unit of analysis
   - Population

B. Develop measures for variables

C. Design methodology, data collection

D. Address ethical issues

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A. Identify the Sample

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Identify the Sample

Population ⟹ **Unit of Analysis** ⟹ **Sample**

Total collection of a set of units of analysis
- E.g., Canadians, schools, newspaper articles, businesses, events, etc.

The element about which observations are being made or data collected
- E.g., an individual Canadian, a school, a newspaper article, a business, an event, etc.

Any subset of units collected from a population
- E.g., a random selection of Canadians

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Types of Samples

Probability Sample

- Sample collected using random process such that each unit in the population has a known chance (probability) of being selected.
- Aim is to minimize sampling error

Non-Probability Sample

- A sample not selected using a random selection method

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Types of Probability Samples

Simple Random Sample

- Each unit of population selected by chance and has equal probability of being included.

Systematic Sample

- Units are selected from a sampling frame according to fixed intervals.

Stratified Random Sample

- Units are randomly selected from a population that has been divided into categories.

Cluster Sample

- Initial sampling frame consists of clusters of elements, each of which is then sampled using a probability sampling technique.

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Types of Non-Probability Samples

Purposive Sample

- Cases are selected on the basis of criteria determined by researcher

Convenience Sample

- Sample selected on the basis of availability to researcher

Snowball Sample

- Sample in which researcher makes initial contact with a small group of people who are relevant to the topic, and then uses them to establish contacts with others

Quota Sample

- Sample a population to match relative proportions of people in different categories

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Sample Size

- The more diverse the population, the larger the sample must be
- The more variables being studied, the larger the sample must be
- Cost and convenience

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B. Develop Measures

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From Concept to Measurement

Theory	**Conceptualization** Defining the Concept	**Political Alienation** Political distrust, powerlessness, meaninglessness
	Nominal Definition Variables	**Political Distrust** "The perception that the norms or rules intended to govern political relations have broken down, and that departures from prescribed behavior are common."
	Operational Definition Indicators	**Indicators of Distrust** 1. Do you think people running government are crooked? 2. How much of the time do you think you can trust government to do what is right? 3. Would you say that government is run by a few big interests looking out for themselves or that it is run for the benefit of all people?
Data	**Instrumentation**	**General Social Survey**

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Composite Measures

- Index
  - A method of accumulating scores on individual items to form a composite measure of a complex phenomenon.
- Scale
  - A multi-indicator measure that can identify patterns of intensity or structure
  - E.g., Likert Scales, Guttman Scale, Feeling Thermometers

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Decisions About Operationalization

- Level of Measurement?
  - Nominal
  - Ordinal
  - Interval
- Range or Degree of Variation?
- Accuracy of Measurement?
  - Validity
  - Reliability

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Levels of Measurement

Nominal

Defines mutually exclusive and exhaustive categories or values of a variable

E.g., Which party did you vote for?

1. Liberal
2. Conservative
3. NDP
4. Bloc
5. Other?

Ordinal

Defines mutually exclusive and exhaustive categories that can be ranked or ordered

E.g., How effective do you think Stephen Harper is as PM?

1. Very effective
2. Effective
3. Ineffective
4. Very ineffective?

Interval/Ratio

All of the characteristics of nominal and ordinal data, but also additive

E.g., How do you feel about Stephen Harper, using a scale from 0 to 100, where '0' means you REALLY DISLIKE the leader and '100' means you REALLY LIKE the leader?

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Reliability

- The consistency and stability of a measure
  - A measure is reliable insofar as it generates the same results over repeated applications
  - The more consistent the results, the more reliable the measure; the less consistent the results, the lower the reliability.
  - Unreliable measures involve *random error*
    - they are as likely to over-estimate as they are to under-estimate the true value

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Validity

- Validity is the extent to which a measure actually measures the concept being studied
  - i.e., Is it measuring what its supposed to measure?
  - The more effectively a measure captures that concept, the higher its validity.
  - Validity is compromised by *non-random error*

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C. Research Designs, Methodology

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Causal Explanations

- A valid causal explanation demonstrates:
  - Co-variation
    - That the change in one variable is accompanied by a change in the other
  - Time order
    - That the cause precedes the effect
  - Absence of confounding or spurious variables
    - That there is no other causal factor at play

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Causality v. Correlation

- Correlation:
  - A statement that two things are systematically related
- Causality:
  - A statement that the change in state of one thing brings about a change in state of another thing.

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Research Methodologies

I. Surveys
II. Interviews and Focus Groups
III. Experiments
IV. Content Analysis
V. Comparative Case Studies
VI. Observation and Fieldwork

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I. Survey Research

- Methods of Data Collection in Surveys
  - Telephone surveys
  - In-person surveys
  - Self-administerd surveys
  - Electronic surveys

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Closed Ended Questions

Closed ended questions provide respondents with limited choice of responses from which they must choose

Advantages
- Easy to answer, fast
- Easy to code and for data entry
- Easy to compare answers
- Respondents more likely to respond to questions about sensitive issues
- Limit misinterpretation of questions

Disadvantages
- Responses may not reflect opinions of respondents
- Over-simplify issues
- Wording influences how respondents answer

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Open Ended Questions

Allow respondents to provide their own answers using their own words

Advantages
- Don't force choices between fixed responses
- Allow respondents to indicate how they would define a complex issue or topic
- Useful when research can't specify possible responses in advance
- Useful in testing knowledge of respondents

Disadvantages
- Respondents may give too little or too much information
- Some respondents may not answer them if they don't have writing skills
- Leave more room for error in coding and interpreting responses
  - Reduces reliability of the data

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Question Wording – Problems

- Double-barreled questions
  - "Do you agree with the statement that the situation in Iraq is deteriorating and that Canada should send troops to Iraq?"
- Ambiguous questions
  - "Do you agree with affirmative action?"
- Leading questions
  - Don't you think global warming is a serious environmental problem?

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- Loaded language/wording:
  - E.g., 'needy' or 'poor' vs. 'people on welfare'
  - E.g., 'socialized medicine' vs. 'national health insurance'
- One-sided questions/biased questions
  - E.g., "Most people believe that the government is corrupt. What do you believe?"
- Push Polling
  - E.g., "I agree with Danielle Smith [Leader of Alberta's Wild Rose Party] that people should be allowed to drink and drive right up to criminal impairment without consequence."

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Question Order

- Keep the same order for all respondents
- Keep questions directly relevant to the stated purpose of the research near beginning
- Keep socio-demographic questions near the end
- Keep sensitive or potentially embarrassing questions near the end
- Group questions by subject area
- Move from general to specific questions

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II. Interviews

- Structured Interviews
  - Interviewer is neutral in the interview
  - Exact question wording and order are followed; probing is uniform, clarifications are minimal
  - Responses are recorded exactly, verbatim
- Unstructured Interviews
  - Interviewer engages with respondents; characteristics of interviewer may be critical
  - No predetermined questions, wording
  - No set time, duration of interview
  - May involve multiple informants

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- Semi-Structured Interview
  - Typically used for qualitative data analysis
  - Interviewer engages with respondents
  - General topics for investigation are identified
  - Some open-ended questions may be predetermined; many arise from the interview itself

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- Advantages of Semi-Structured Interviews
  - Depth of information
  - Respondent can influence the topic so unexpected issues/topics emerge
  - Researcher can probe to understand perspectives and experiences
  - Topic guide ensures that a core list of questions is asked in each interview
  - Because order of questions not fixed, flow and share of views more natural

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- Disadvantages of Semi-Structured Interviews
  - Trained interviewers needed to probe without being directive or judgemental
  - Difficult to analyse findings – must be done by people who did the interviews
  - Researcher has to avoid bias in analysis
  - Analysis is time-consuming
  - Difficult to generalise findings

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Focus Groups

- Focus group methods involve bringing together small groups of carefully selected individuals for an in-depth discussion of some topic, guided by a moderator, in order to learn how they think about it.

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Purpose

- Exploratory research
  - Formulate hypotheses for future research
- Interpretation of data collected by other means
  - Triangulation of methods
- Produce new data
- Study group processes

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Advantages

- May provide more accurate insights into what people actually think
- Results reflect social realities more accurately
- Study group dynamics
- Less time and resource intensive

Disadvantages

- Research may yield subjective interpretations
- Limited representativeness of population
- Artificial setting

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III. Classical Experimental Design

- Characteristics:
  1. Dependent variable and a researcher-controlled independent variable (i.e., the experimental treatment)
  2. Use of at least two groups – experimental group and control group
  3. Randomization of subjects to the groups
  4. Pretest and posttest subjects on the dependent variable

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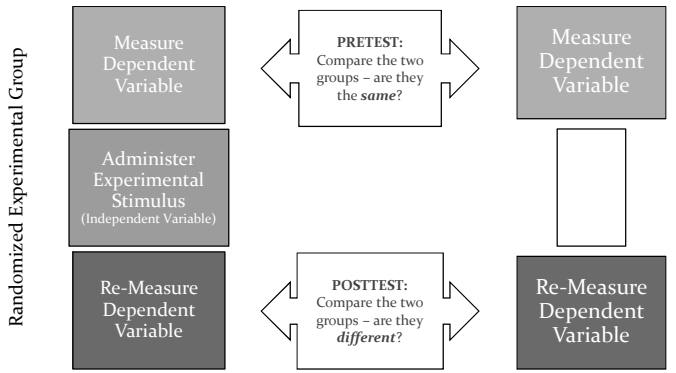
Classical Experimental Design



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- Experimental designs tend to have very high internal validity
- Problems with experimental designs
  - Questionable external validity due to:
    - Artificiality of the experimental intervention
    - Artificiality of the experimental setting
    - Non-random (non-probability) sampling

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IV. Content Analysis

- An approach to the analysis of documents and texts that seeks to quantify content in terms of predetermined categories and in a systematic and replicable manner
  - Content – any message that can be communicated, including words, meanings, symbols, themes (AB, p. 212)
  - Text – any form of communication, including written, visual, spoken, sung (AB, p. 212)
    - E.g., transcripts, Hansard, reports, legislation, press releases, court decisions, newspapers, blogs, Twitter etc.

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Steps in Content Analysis

1. Identify a research question
2. Define concepts and operationalize variables
3. Develop a coding form
4. Identify population, unit of analysis, and method of sample selection
5. Collect data
6. Conduct the analysis

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V. Case Study Design

"A detailed examination of one setting, or a single subject, a single depository of documents, or one particular event." (Berg & Lune 2012, 325)

- Capable of examining simple or complex phenomena
- Units of analysis can vary from single individuals to large organizations or events
- Data gathering methods are numerous (surveys, content analysis etc.)
- Can make meaningful contributions to theory

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Types of Case Studies

- Intrinsic case studies
  - Better understand a unique, interesting, or important case
- Instrumental case studies
  - Provide insight into a broader issue or theoretical explanation
- Collective case studies
  - Multiple cases replicate findings, generate and/or test theories

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- Problems with case study design
  - Questions about external validity – how generalizable are the findings?
    - Depends number and types of cases
    - If case is representative, external validity may be high
    - May be able to develop analytic vs. statistical generalization
  - May be time- and resource-intensive
    - Depends on the number and types of data collection methods used

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Designing Comparative Studies

1. Ensure concepts and variables 'travel'
2. Ensure that measures are equivalent – i.e., they measure the same concept across cultures, over time
3. Choose the design of the comparative study
4. Observations must be independent from one case to another

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- Comparative design tends to rely upon fewer cases, but ones that are selected purposefully rather than at random.
- Two basic comparative research designs:
  - Most different systems
  - Most similar systems

	Most Similar Design	Most Different Design
Compare polities that have substantial	...similarities.	...differences.
Research hypotheses focus on relationship	...differences.	...similarities.

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VI. Field Research

- "Field research is the systematic study, primarily through long-term interactions and observations, of ordinary events and activities in the settings in which they occur. A primary goal of field research is to understand what these activities and events mean to those who engage in them."

Source: C. Bailey (1996). A Guide to Field Research. Sage. Page 1.

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D. Ethical Issues in Research

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Ethics and Research

- Respect for human dignity "requires that research involving humans be conducted in a manner that is sensitive to the inherent worth of all human beings and the respect and consideration that they are due."
  - "In this Policy, respect for human dignity is expressed through three core principles:
    - Respect for Persons
    - Concern for Welfare
    - Justice

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Core Ethical Principles

- Free and informed consent
  - Freely given, in the absence of coercion
  - Informed, based on complete and honest information about what is involved in participation
  - Special protections should be put in place for vulnerable persons
  - Limited use of deception

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- Respect for privacy and confidentiality
  - Right to privacy: control access to personal information.
  - Anonymity: names of participants and any other unique identifiers remain unknown.
  - Confidentiality: associated with information or data other than personal identity.