WHAT IS RESEARCH?

OVERVIEW OF RESEARCH METHODOLOGY
CLASS SESSION 2

WHAT IS RESEARCH?

Research is the systematic process of collecting and analysing information (data) in order to increase our understanding of the phenomenon with which we are concerned or interested.

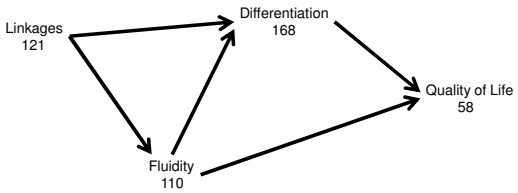
Research involves three main stages:

- planning
- data collection
- analysis.

THE RESEARCH PROCESS

- Originates with a question or problem.
- Requires a clear articulation of a goal.
- Follows a specific plan of procedure.
- Usually divides the principal problems into more manageable sub-problems (hypotheses), which guide the research.
- Accepts certain critical assumptions.
- Requires collection and interpretation of data to answer original research question.

For example – in community development



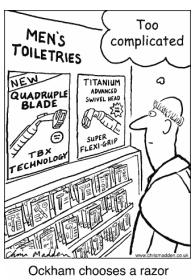
Hypotheses

- A hypothesis provides a conceptual framework to explain existing observations and predict new ones
- We do not prove hypothesis.
- *We either reject them or fail to reject them.*
- If we do not reject a hypothesis is becomes an accepted theory.
- An accepted theory is not a fact.

Choosing a Hypothesis: Ockham's Razor

- Ockham's Razor is the principle proposed by William of Ockham in the 14th century: "*Pluralitas non est ponenda sine neccesitate*", which translates as "entities should not be multiplied unnecessarily".

- The hypothesis which makes the least number of assumptions that explains the observation is best.
  - Translation: Keep things simple.
- Better translation: "when you have two competing theories that make exactly the same predictions, the simpler one is the better."
- Example in medicine: Diagnostic parsimony advocates that when diagnosing a given injury, ailment, illness, or disease a doctor should strive to look for the fewest possible causes that will account for all the symptoms.



Ockham chooses a razor

Occam's (Ockham's) Razor
Another example

The planets move around the sun in ellipses because there is a force between any of them and the sun which decreases as the square of the distance.

or

The planets move around the sun in ellipses because there is a force between any of them and the sun which decreases as the square of the distance. This force is generated by the will of some powerful aliens.

WHAT IS SOCIAL RESEARCH?

It is research involving social scientific methods, theories and concepts, which can enhance our understanding of the social processes and problems encountered by individuals and groups in society.

It is conducted by sociologists, psychologists, economists, political scientists and anthropologists.

It is not just common sense, which is based on facts without theory, using personal life experience or perpetuating media myths.

- **It is not anecdotal.**

SOCIAL RESEARCH IS A SCIENTIFIC PROCESS

It involves the systematic collection of methods to produce knowledge.

It is objective.

It can tell you things you do not expect.

It consists of theory and observation.

Sometimes called 'soft sciences' because their subject matter (humans) are fluid and hard to measure precisely.

It is an empirical research process

i.e. facts are assumed to exist prior to the theories that explain them.

FORMS OF SOCIAL RESEARCH

Basic or Pure Research:

- aim is to develop a body of general knowledge for the understanding of human social behaviour by means of a combination of empirical enquiry and application of theory.

Applied or Policy Oriented Research:

- aim is to provide knowledge and information that can be used to influence social policy.

FORMS OF SOCIAL RESEARCH:

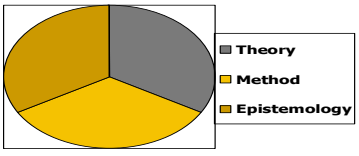
Basic Research is done by academics.

Applied Research is conducted by applied social researchers employed by sponsors.

Success for basic social researchers is when results are published in a peer reviewed journal and have an impact on the scientific community.

Success for applied social researchers is that their results are used by their sponsors in decision making.

COMPONENTS OF RESEARCH



THEORY AND RESEARCH

Theories can be categorized by:

Direction of reasoning (deductive/inductive)

Level of social reality that it is explaining (macro/meso/micro)

Whether it is formal (general) or substantive (specific).

METHODOLOGICAL APPROACHES: EPISTEMOLOGY

There are three main epistemological perspectives:

Positivism

- Interested in causes and predicting likelihood of incidences, seeks to explain, creates social 'facts'.

Phenomenology

- Interested in social meanings, seeks to interpret, uses direct involvement, creates data on social interactions.

Critical

- Interested in understanding social phenomena in their social context, seeks out structural relationships, data is historical, structural and ideological.

ONTOLOGICAL CONSIDERATIONS

Objectivism

- Phenomena independent of social actors.
- Organisations and culture are said to exist as a tangible object, external to the social actor.

Constructionism

- Social phenomena and their meanings are continually being accomplished by social actors.
- Not only produced through social interaction but they are in a constant state of revision.

RESEARCH DESIGN

This involves:

- Defining the problem/research question
- Review of related literature
- Planning the research
  - What methodology will you use?
  - What data do you want to use/produce?
  - How feasible is your research approach?
- Ethical considerations.

WHAT IS RESEARCH DESIGN?

A research design provides the framework for the collection and analysis of data.

A choice of research design reflects decisions about the priority being given to a range of dimensions of the research process.

Involves research method(s).

- A research method is simply a technique for collecting data. It can involve a specific instrument such as a self-completion questionnaire or a structured interview etc.

TOOLS OF RESEARCH

- **The library and its resources**
- **The computer and its software**
- **Techniques of measurement**
- **Statistics**
- **Facility with language**

Tools are not research methods – e.g. library research and statistical research are meaningless terms.

Tools help your research methods.

How familiar are you with these tools?

WHAT DO YOU NEED TO THINK ABOUT WHEN DESIGNING RESEARCH?

What is the purpose of the research?

What are your units of analysis?

What are your points of focus?

What is the time dimension?

Designing a research project:

- conceptualisation
- operationalisation.

Reliability, replication and validity.

DIFFERENT PURPOSES OF RESEARCH (1)

Exploratory

- Goal is to generate many ideas.
- Develop tentative theories and conjectures.
- Become familiar with the basic facts, people and concerns involved.
- Formulate questions and refine issues for future research.
- Used when little is written on an issue.
- It is the initial research.
- Usually qualitative research.

DIFFERENT PURPOSES OF RESEARCH (2)

Descriptive research

- Presents a profile of a group or describes a process, mechanism or relationship or presents basic background information or a context.
- Used very often in applied research.
- E.g.: General Household survey – describes demographic characteristics, economic factors and social trends.
- Can be used to monitor changes in family structure and household composition.
- Can also be used to gain an insight into the changing social and economic circumstances of population groups.
- Often survey research.

DIFFERENT PURPOSES OF RESEARCH (3)

Analytical (or explanatory)

- goes beyond simple description to model empirically the social phenomena under investigation.
- It involves theory testing or elaboration of a theory.
- Used mostly in basic research.

DIFFERENT PURPOSES OF RESEARCH (4)

Evaluation

- characterised by the focus on collecting data to ascertain the effects of some form of planned change.
- Used in applied research to evaluate a policy initiative or social programme to determine if it is working.
- Can be small or large scale, e.g.: effectiveness of a crime prevention programme in a local housing estate.

UNITS OF ANALYSIS

Can be

- **individuals,**
- **groups,**
- **organizations,**
- **social artifacts**

  (ie. products of social beings, for example, books, poems, paintings, automobiles, buildings, songs, pottery, jokes and scientific discoveries).
- **behaviours**

  (eg: social interactions, such as friendship choices, court cases, traffic accidents.

Weddings (as a unit of analysis) –

might be characterised as being religious or secular or ethnically or religiously mixed resulting in divorce or not or they could characterised by descriptions of one or both of the marriage partners.

Problem of the ecological fallacy

POINTS OF FOCUS

1. **Characteristics**
2. **Orientations**
   (attitudes, beliefs, prejudices, personality traits)
3. **Organizations**
   (would be in terms of policy, procedures etc
4. **Social interactions, actions.**

OTHER THINGS TO NOTE

Time dimension – cross-sectional or longitudinal

Conceptualisation – i.e. you must specify the meanings of the concepts and variables to be studied.

Operationalisation – how will we actually measure the variables under study?

Reliability – are the results repeatable? – relevant to quantitative social research.

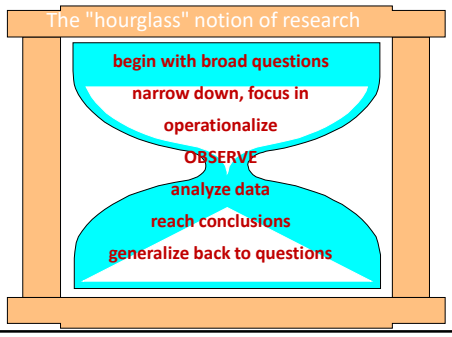
Replication - can others replicate the results?

Validity – will examine later but are the results a true reflection of the world? Internal (are they measuring the underlying pheonomen)/external (generalise to the population)

STEPS IN RESEARCH DESIGN

1. Choose a Topic.
2. Focus research question.
3. Design the study.
4. Collect the data.
5. Analyse the data.
6. Interpret the data.
7. Present the results.

STRUCTURE OF RESEARCH



FINAL RESEARCH PRODUCT

DEFINING A RESEARCH PROBLEM

State your research problem.

Are there any sub-problems?

What is the background (literature review) on this problem?

What is good about tackling this problem? Why should we be interested in answering the research question?

Discuss your problem with peers and experts.

Have you looked at this problem from all sides to minimize unwanted surprises?

Think through the process. Are you capable of addressing the issue? Can you foresee any pitfalls in data collection and analysis? What tools are available for you to use?

What research procedure will you follow?

RESEARCH DESIGN

Where to start?
- Compile questions.

Title.
Background/information.
Literature review.
Aims and objectives.
Methods.
Timetable.
Data analysis.
Ethical issues.
Resources.
Dissemination?

DESIGNING THE RESEARCH

After stating your research problem, you need to think about what approach you will use to the problem. Will it be quantitative or qualitative?

RESEARCH PROPOSAL MORE FORMAL THAN RESEARCH DESIGN

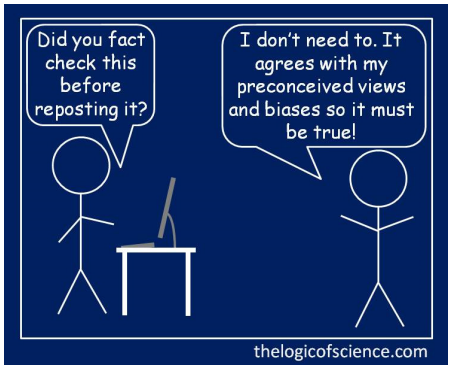
Title
Statement of research question
- *Remember to stress why the problem is important!*

Background/information
Aims and objectives of the study
Methods
Timetable
Data analysis
Ethical issues
In Funding applications, add
- Resources/Budget
- Dissemination

QUALITATIVE RESEARCH PROPOSAL

Qualitative Research Proposal is more difficult to write as it is less structured and pre-planed.

1. Demonstrate ability to complete a proposed qualitative project – use an extensive discussion of the literature and the significance of the problem and sources. (This shows reviewers that you are familiar with qualitative research and the appropriateness of the method for studying the problem).
2. Also describe a qualitative pilot study you have conducted. (This demonstrates your motivation, familiarity with research techniques and ability to complete a report about unstructured research).



RESEARCH METHODS: ETHICS

Because sociologists are dealing with real people in their everyday lives, we must be very cautious in our work.

All research that directly involves human subjects must first be approved by an *Institutional Review Board (IRB).*

Study participants must give *informed consent* prior to agreeing to participate and must be *debriefed* afterward.

ETHICAL ISSUES

Informed Consent.
Respect for privacy.
Confidentiality and anonymity of data.
What is permissible to ask?
No harm to researchers or subjects.
No deceit or lying in the course of research.
Consequences of publication.

ETHICS

- **Professional ethics**
- **Privacy and consent issues are concerns in many contexts outside of research:**
  - e.g., American Medical Association, American Psychological Association codes
  - Federal privacy rules
    - Health Insurance Portability and Accountability Act (HIPPA)
    - Family Educational Rights and Privacy Act (FERPA)
    - And others
- **Research ethics**
  - e.g. American Sociological Association, American Statistical Association (see handout list)

RESEARCH ETHICS

What is research?

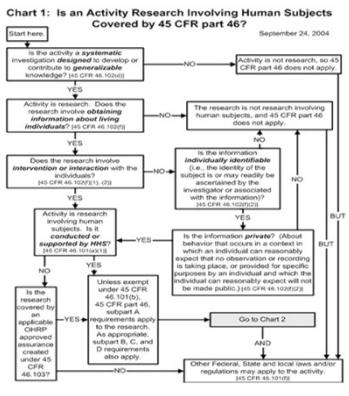
RESEARCH is defined as "a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge"

RESEARCH ETHICS

- **What is research?**
- **Publication of results outside the university is a critical issue**
- **Distinct from practice**
  - Individual cases
- **Distinct from teaching assessment**
  - Teaching evaluations
- **Distinct from student projects in classes**
  - Ethical conduct is still required

RESEARCH ETHICS

- **What is research with human subjects?**
- **HUMAN SUBJECT is defined as "a living individual about whom an investigator (whether professional or student) conducting research obtains: (1) data through intervention or interaction with the individual, or (2) identifiable private information**
- **Research with animals also requires ethics review, conducted by Institutional Animal Care and Use Committees**



RESEARCH ETHICS

Trigger Events & Ethical Milestones

The Nazi Experiments

Tuskegee Syphilis Study

Nuremberg Code, 1947

National Commission for the Protection of Human Subjects of Biomedical & Behavioral Research, 1974

Helsinki Accords

*** Belmont Report, 1978**
*** Common Rule, 1991**

RESEARCH RISKS

- Physical Risks
- Social Risks
- Psychological Risks
- Economic Risks

TUSKEGEE SYPHILIS STUDY

American medical research project conducted by the U.S. Public Health Service from 1932 to 1972, examined the natural course of untreated syphilis in black American men. The subjects, all impoverished sharecroppers from Macon county, Alabama, were unknowing participants in the study; they were not told that they had syphilis, nor were they offered effective treatment.

OTHER ETHICAL RESEARCH ISSUE EXAMPLES

Willowbrook (1950s)
- mentally retarded children were deliberately infected with hepatitis virus

Jewish Chronic Disease Hospital (1960s)
- Live cancer cells were injected into 22 senile patients

Milgram (1963)
- "Behavioral study of obedience"

Humphries (1970)
- *Tearoom Trade: Impersonal Sex in Public Places*

Zimbardo (1971)
- Stanford Prison Experiment

Tomazic (1973)
- Drug usage among students in Gaston County, NC

Dissertation research at Saint Louis University

Administrative research at Saint Louis University

THE BELMONT REPORT

The principles of the Belmont Report govern all research supported by the U.S. Government. The ethical principles outlined in the report are the basis for subsequent regulations designed to ensure protection of human subjects in research.

- Respect for Persons
- Beneficence
- Justice

THE BELMONT REPORT

1.Respect for persons

Informed consent

Protection of privacy and maintaining confidentiality

Additional safeguards for protection of vulnerable populations to prevent coercion or undue influence

Protection of individuals with reduced autonomy

THE BELMONT REPORT

2. Beneficence

maximize benefits and minimize harm

an independent person/board must review all research and assess the risk/benefit ratio

this assessment includes evaluation of the study design and the ability of the researcher

THE BELMONT REPORT

3. Justice

selection of subjects must be equitable

- inclusion of appropriate populations without unnecessary exclusion of populations-- fairness of inclusion and distribution of results

equitable distribution of research burdens and benefits

FEDERAL REGULATIONS

Current regulations were developed to comply with the principles in the Belmont Report

Title 45 Public Welfare Department Of Health And Human Services National Institutes Of Health Office For Protection From Research Risks

Part 46 Protection Of Human Subjects

Known as 45 CFR Part 46 or the Common Rule

www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm

Federal protection of human subjects is overseen by the Office of Human Research Protections (OHRP) at Health and Human Services (HHS)

www.hhs.gov/ohrp/

FEDERAL REGULATIONS

45 CFR 46

A set of guidelines-- not meant to be rules

Each institution interprets the guidelines for their types of research

Research facilities may require more than one review board, depending on the variety of research conducted at the facility

SLU POLICIES

ALL researchers/experimenters working with human subjects in research investigations are required to obtain clearance from SLU's IRB PRIOR to running the experiments/studies

ALL researchers/experimenters are required to complete the online training course entitled "Program for the Protection of Human Research Subjects" conducted by the Collaborative Institutional Training Initiative

See the website: http://www.citiprogram.org

SLU POLICIES

For all projects, regardless of the level of review, an application must be submitted to the IRB prior to the initiation of any research involving human subjects.

Most federal agencies have a "Just-in-time" policy. That is, you don't need to have IRB approval at the time of proposal submission, but you must have IRB approval prior to the acceptance of award funds.

The IRB chairperson is responsible for determining the review status of each project.

Three levels of IRB review / continuing review

SLU POLICIES

Exempt- minimal risk to participants (risk equivalent to everyday life)

- educational research
- anonymous surveys
- secondary/archival data
- naturalistic observation
- quality control

Please note that exempt research projects still need to be submitted to the IRB. Exemptions are granted by the IRB chair.

SLU POLICIES

Expedited

Only research in categories 1-7 in 45 CFR 46.110(b)(1) may be reviewed through an expedited procedure.

- Also, the study must
  - Be no more than minimal risk
  - Collect no sensitive information
  - Not recruit protected populations as participants
  - Not be classified research

SLU POLICIES

Full Committee

- greater than minimal risk
- intervention/experimental studies which require investigational new drug applications
- vulnerable subjects (prisoners, children, pregnant women)

- These decision tables and others can be found on the Health and Human Services (HHS) Office for Human Research Protections (OHRP) website at

http://www.hhs.gov/ohrp/policy/checklists/decisioncharts.html

SLU POLICIES

CITI ethics training course - online

Go to www.citiprogram.org.

Register as a new user (username and password)

Select Saint Louis University

Select a learner group

e.g., Social/Behavioral, Biomedical, Students conducting no more than minimal risk research, Archives/Records/Specimens, Educational/Pedagogical Research

Complete the Basic Course (text and quizzes)

INVESTIGATOR RESPONSIBILITIES

to obtain IRB approval for all projects prior to recruitment of subjects and compliance with all IRB determinations

protecting the rights of subjects according to 45 CFR 46

obtaining and documenting the informed consent for all subjects, as appropriate

ensuring that each potential participant understands the nature of the research and their participation

fully debrief all subjects, when necessary

to inform the IRB of any unanticipated events during the conduct of the protocol

to inform the IRB of any changes in protocol following committee approval *prior* to implementation of changes-- must obtain IRB approval for all protocol changes

report to the IRB the status of the protocol one year after approval and, if necessary, submitting an extension

"Disappointment is when a beautiful hypothesis is destroyed by an ugly fact"

NEWTON