

RESEARCH

METHODOLOGY

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THEORY OF SCIENCE

THE UNIVERSE OF SCIENCE

- Ontology What is?
- Epistemology How do I know?
- Methodology How do I investigate?

To know about the surroundings in order to be capable
of knowing the map and to make educated choices

ONTOLOGY

Assumptions that are not discussed

Human laws:

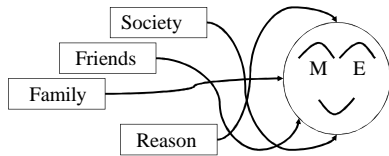
Utility maximisation
Similarity attracts, dissimilarity repulse

Societal laws:

Profit maximisation
Equilibrium
Conflict
Consensus

Conscious of ontological assumptions

ZEITGEIST



Epistemology

How do I know?

Inductivist
Experience

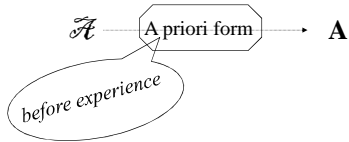
Rationalist
Reason

RATIO: REASON

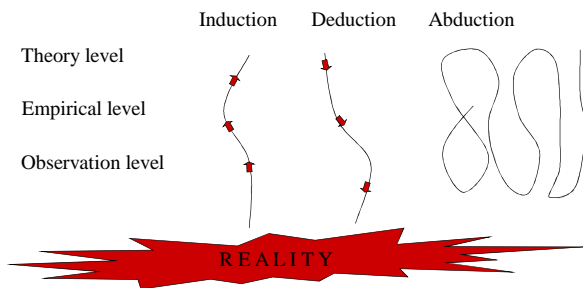


Immanuel Kant

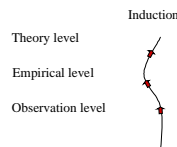
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METHODOLOGY



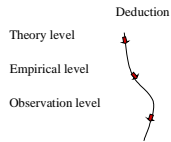
INDUCTION



- + Based on actual experience
- + Many variables observed
- Everything cannot be observed
- Few cases observed

Hypothesis/Theory generation

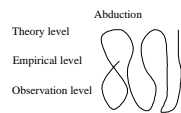
DEDUCTION



- + Based on actual knowledge
- + Many cases observed
- Everything cannot be observed
- Few variables observed

Hypothesis/Theory testing

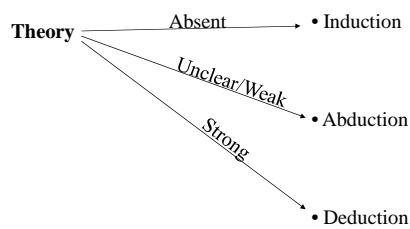
ABDUCTION



- + Based partly on knowledge and partly on experience
- + Open for new factors
- Everything cannot be observed
- Few cases observed

Hypothesis/Theory evaluation

CHOICE OF BASIC METHODOLOGY



Common mistake: No book on the subject=Absent theory
Imagine that you will think of something that no one has thought about!

CRITERIA OF SCIENCE

- **Critical, revolutionary attitude**

Science is an attitude where you are always prepared to creatively and critically reconsider the established truths, opinions and methods

- **Values**

Notice: who put the question (Myrdal)

- **Examinable**

Repetition: The research has to be presented in a way that makes it possible to repeat the research

Falsification: Knowledge has to be able to falsify

Openness: Full account of the results and the research

THE PRINCIPLE OF FALSIFICATION

Knowledge is superior if

- not yet has been falsified
- that are more exposed for falsification than other theories
- that explains more phenomenon's than other theories
- that are simpler than other theories

Remember:

Knowledge are those statements that are not yet falsified

THREE RESEARCH ORIENTATIONS

- **Positivism**
objectivity, generality, value indifference
- **Hermeneutics**
intersubjectivity, individuality, value validity
- **Critical theory**
objectivity, generality, value validity

Individual ideals

- Objectivity or intersubjectivity
- Generality or individuality
- Value indifference or value validity

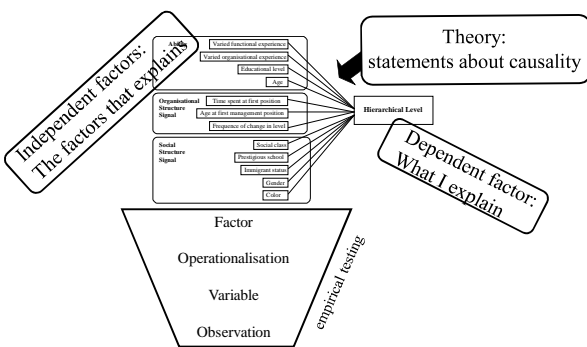
Overall ideals

- Conceptual clarity
- Logic
- Fit with data

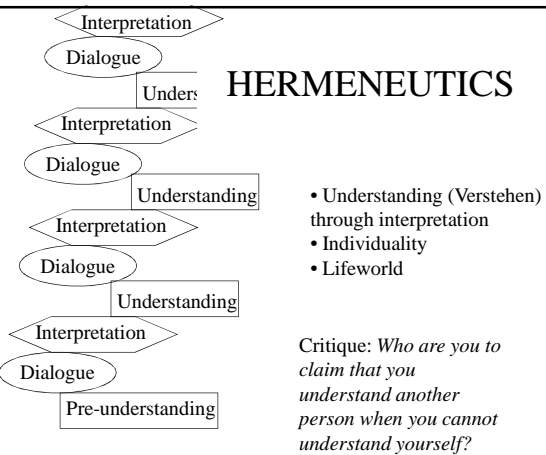
POSITIVISM

- Explanation: $A \Rightarrow B$
 - Causal: A precede B in time (game of marbles)
 - Functional: A is a effect of B (Christmas)
 - Generality: Social laws
 - System
- Critic: Societies are not nature, control and social engineering

COLLIN, THE POSITIVIST



HERMENEUTICS



WHY HERMENEUTICS?

- The dialectics of social life: everything creates its own negation. Resistance against social engineering
- Market segmentation in the research market due to increasing competition among academic teachers

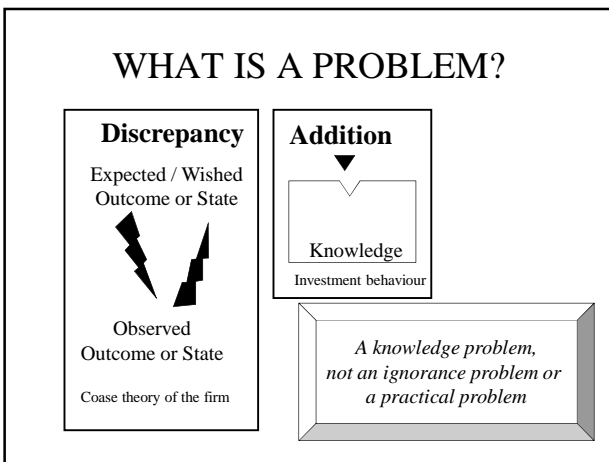
CRITICAL THEORY

- Research for liberation, for change
- Revealing the power structures of society
- Value oriented

WHY CRITICAL THEORY

- To reconcile the separation between system and individual
- To accomplish societal change

PROBLEM



AIM OF THE THESIS I.

Why have an aim?
Tradition
The need of the supervisor
Directing the mind and the work during the whole process
+ focused
+ avoiding to be adrift
+ communication

continuously criticised

AIM OF THE THESIS II.

The aim of the thesis is to get 30 points
Pragmatic, but not informative....

The aim of the thesis is to get knowledge about how corporations choose accounting methods
Object, but too wide

The aim of the thesis is to get knowledge about how corporations choose accounting methods through the application of positive accounting theory
Object and theory, but get knowledge is too loose

The aim of the thesis is to explain how corporations choose accounting methods through the application of positive accounting theory
Object and theory and research strategy

METHOD

How will the aim be realised

METHODOLOGY

METHODOLOGY

- Selection of method for the thesis
Inductive - Deductive
- Selection of method for observation
Experiment Survey Case study
- Selection of method for data collection
Interview Questionnaire Documents ...

SELECTION OF METHOD FOR THE THESIS

➤ **The nature of the scientific problem**

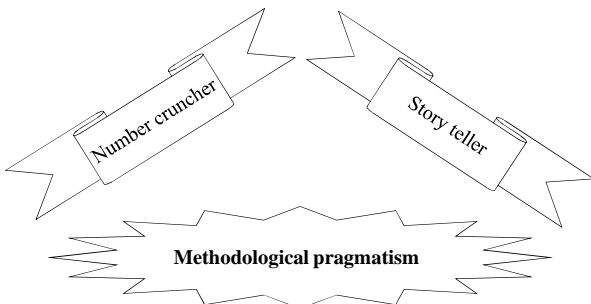
	Well defined	Theory present
Explorative	No	No
Descriptive	Yes	No
Explanatory	Yes	Yes

➤ **The researchers knowledge interest**

Explanation Understanding Change

Deductive **Inductive**

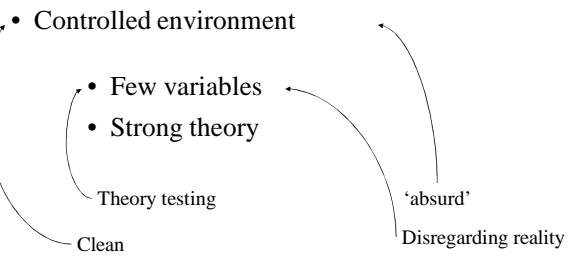
SELECTION OF METHOD FOR OBSERVATION



METHODOLOGICAL PRAGMATISM

	Experiment	Survey	Case Study
Number of variables	<i>Very few</i>	<i>Few</i>	<i>Many</i>
Number of cases	<i>Few</i>	<i>Many</i>	<i>Few</i>
New relations	<i>No</i>	<i>No</i>	<i>Yes</i>
Generality	<i>Yes</i>	<i>Yes</i>	<i>No</i>

EXPERIMENT

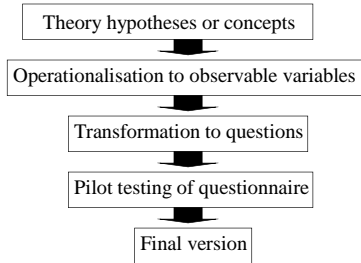


SURVEY

- Generalisation through sampling from a population
- often economical, using questionnaire
- Strong theory

Theory testing Superficial
 Knowledge for populations False generalisation

QUESTIONNAIRE/ INTERVIEW GUIDE



QUESTIONNAIRE/ INTERVIEW GUIDE II

Common mistakes

Asking without knowledge
tell me about your investment plans

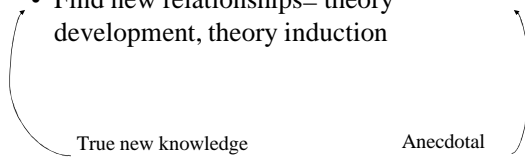
No operationalisation of concepts
how were you socialised?

CASE STUDY

- Many variables/ rich observations
- Find new relationships= theory development, theory induction

True new knowledge
Uncover many relationships/history

Anecdotal
Not rigorous



CASE STUDY II

Let's get out and talk to them.

Let's make a case study

A MISTAKE YOU WILL PAY FOR!

Rigorous (Yin-book)

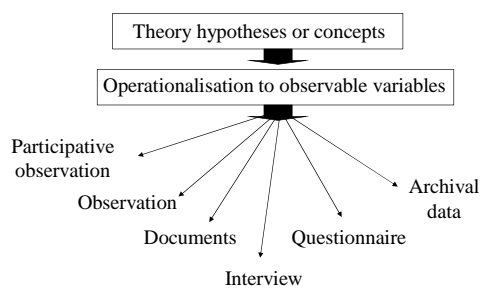
for example: selection of cases, selection of data collection method, selection of functions, persons.

Qualitative AND quantitative data

Qualitative AND quantitative analysis

DATA COLLECTION

SELECTION OF METHOD FOR DATA COLLECTION



OPERATIONALISATION

- **VALIDITY:** Degree of observing the phenomena one wish to observe
- **RELIABILITY:** Degree to what the same way of observing will yield the same results

Measuring temperature with a ruler:
Not valid, but maybe reliable

Questions about fidelity at the office or in the home kitchen:
Maybe valid, but low on reliability

CRITICISE YOUR SOURCES

- Dependency between sources
- Zeitgeist
- Interest
- Lies

QUESTIONNAIRE - INTERVIEW

QUESTIONNAIRE		INTERVIEW
easy	Quantitative data	hard
easy	Qualitative data	easy
well...	'Deep' <small>Superstition of hermeneutics</small>	well...
No	Accommodate	Yes

No interview without approval by the supervisor concerning the interview guide or the questionnaire!!!!

ADVICES FOR INTERVIEWS

- Research ethics: Respondent owns the data. Consent by the respondent is needed.
- Knowledge about the organisation, the person, the research problem
- Interview guide, approved by the supervisor
- Short summary to the respondent before the interview
- Describe you, your subject, time plan and research ethics
- Division of labour: one put questions, one takes notes and checks the guide
- Silence! The respondent should do the talking
- Afterwards discuss the major observations, supporting your expectations, surprises
- Write the interview, in summary, as soon as possible
- Send the thesis to the respondent. NOT the summary of the interview.

ADVICES FOR QUESTIONNAIRES

- Simple questions
- One question, one subject
- Know how to analyse the data
- Plan for increasing response rate
- Test, test, and test
- One person has the administrative responsibility
- Security

THE 'PAYING A VISIT' METHOD

Empirical method: Interviewing four corporations

- Interview as the only source: Could be one/sided and therefore weak empirical data
- Semi structured interviews: Could imply an uneducated researcher, i.e., low validity
- Interviewing a corporation: Only drunk people can get responses from corporations. The sober ones interview people
- Interview the one who knows: Could imply an interview with the most interested, with most stakes, i.e., biased answers
- 'Rich data.': Could imply that you do not know the aim and what you are looking for

~~THE 'PAYING A VISIT' METHOD~~

DATA ANALYSIS

DATA ANALYSIS I.

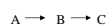
- Division, using theory
- Abstraction, tear apart

Against main stream, what is natural:
Make it unfamiliar
Create contrast
Experiment

DATA ANALYSIS II.

Relationships between variables

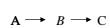
Causal relation



Covariance



Mediating variable



Moderating variable



DATA ANALYSIS III.

Misfit not as expected puzzling

Alternative A. Bad analytical technique
 —————> change technique

Alternative B. Bad theory
 —————> possibility of new knowledge

- Decision alternatives:
 1. Examine Alt. A
 2. Examine Alt. A again
 3. Examine Alt. A once again
 4. Examine Alt. B



DATA ANALYSIS IV.

Quantitative techniques

χ^2 -test	Two variables associated
t-test	Two groups differ
ANOVA	More than two groups differ
Correlation <small>Spearman or Pearson</small>	Strength of linear relation between two variables
Regression	Strength of linear relation between one dependent variable and one or more independent variables

ADVICES FOR DATA FILES

- Documentation, Documentation and Documentation
- Variables created by others: Their definition and reference
- Variables created by yourselves: Definition and idea behind the variable
- Raw data in file. Create new variables and make transformations later.
- Get to know the data set. Mean, median, dispersion, correlation's, outliers, and so on.
- Transformations. Why.

PRESENTATION

PRESENTATION
The importance of the first line

<p><small>"The annual labour of every nation is the fund which originally supplies it with all the necessaries and conveniences of life which it annually consumes, and which consist always, either in the immediate produce of that labour, or in what is purchased with that produce from other nations." Adam Smith, "An Inquiry into the Nature and Causes of the Wealth of Nations"</small></p>
<p><small>"That all our knowledge begins with experience there can be no doubt." Immanuel Kant, "Critique of Pure Reason"</small></p>
<p><small>"I begynnelsen var Ordet, och Ordet var hos Gud, och Ordet var Gud." Johannes Evangelium</small></p>
<p><small>"I de samhällen, där det kapitalistiska produktionssättet härskar, utprädrar rikedom som en 'oerhörd varuanhopning', den enskilda varan som dess elementarform. Vår undersökning börjar därför med en analys av varan." Karl Marx, "Kapitalet, del ett"</small></p>
<p><small>"I en by i La Mancha, vars namn jag inte gitter dra mig till minnes, levde för inte länge sedan en av det slags adelsjunkrar som äger en län i dess ställ, en gammaldags lädersköld, en hästkrake och en vinthund." Miguel de Cervantes Saavedra, "Don Quijote"</small></p>

TYPICAL STRUCTURE

- Ch I. Background, problem, aim, outline
- Ch II. Method
- Ch III. Theory
- Ch IV. Empirical method
- Ch V-x. Analysis
- Ch V-x+1. Conclusions, further research, praxis implications
- Appendix 1-x
- References

THESIS STRUCTURE

Feel free,
as long as you
communicate
in a stringent and efficient way

PRESENTATION ADVICES

- Separate the process of research and the presentation of it
- Outline of the thesis, very informative, in the first chapter
- Write for a target group, increased education, more complex sentences
- Sources. Pay respect for intellectual property. Else:Plagiarism!
- Notes for small deviations
- Reed the proof
- Chapters and sections: All good things are three: 1. Indicate concise what you are going to do, and why you are going to do it; 2. then do it; 3. then give a summary of what you have done, what are the results and its implications
- If 3 above is impossible, then you are blabbing
- Use 3 as a basis for the ending summary in the last chapter
- First sentence in all sections direct the reader. The rest develop.
- Statements, choices have to be argued for. No 'assert' 'think' without arguments! And no 'often' without frequency!

RESPECT FOR INTELLEKTUAL PROPERTY

- Harvard system (<http://www.hb.se/blr/harvard>)
- Five lines in a thesis of 60 pages gave suspension
- All theses are controlled for plagiarism
- No excuses accepted. No mistakes accepted. Stealing is theft.
- No Pass since the most basic quality standards of an academic thesis is not fulfilled

WORDINGS

- **Fula Ord (Ugly words)**
- hävdar, anser, menar (claim, asserts)
- ofta (often)
- bör (should)
- skall (will, shall)
- måste (must)

- **Goda Ord (Good words)**
- eftersom (since)
- p. g. a. (as a result of)
- därför att (because)
- då (that being so)
- när (since)

SPECIFIC ADVICES FOR WRITING THE METHOD

- Divide method into the thesis method and the empirical method
- Empirical method contains a lot how you operationalised your concepts into observable variables, how you have selected your sample, your cases, validity and reliability and so on
- Do not tell the reader the obvious, i.e., that you have visit the Internet and some library.
- No café philosophy, no clichés without meaning and/or consequences.
- Rational arguments: What were the alternatives, which choices have you made, what are the consequences of your choices on the results, how should we evaluate your results.
