Research Methodology and Scientific Writing, 2011, II2202
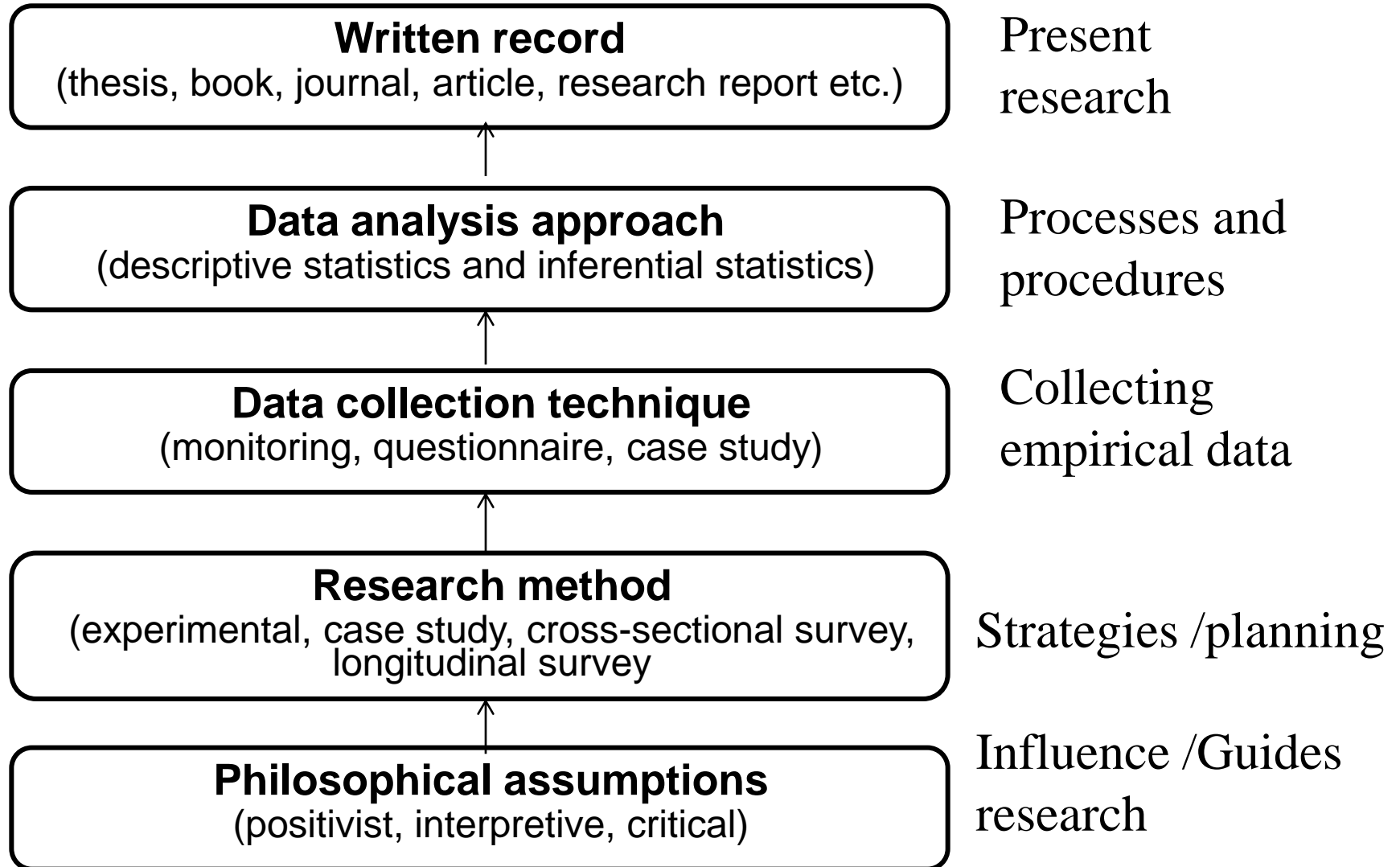
Qualitative method III

Anne Håkansson
KTH Royal Institute of Technology
School of Information and Communication Technology

KTH Information and Communication Technology

Research design - Quantitative

Written record
(thesis, book, journal, article, research report etc.)

Present research

Data analysis approach
(descriptive statistics and inferential statistics)

Processes and procedures

Data collection technique
(monitoring, questionnaire, case study)

Collecting empirical data

Research method
(experimental, case study, cross-sectional survey, longitudinal survey

Strategies /planning

Philosophical assumptions
(positivist, interpretive, critical)
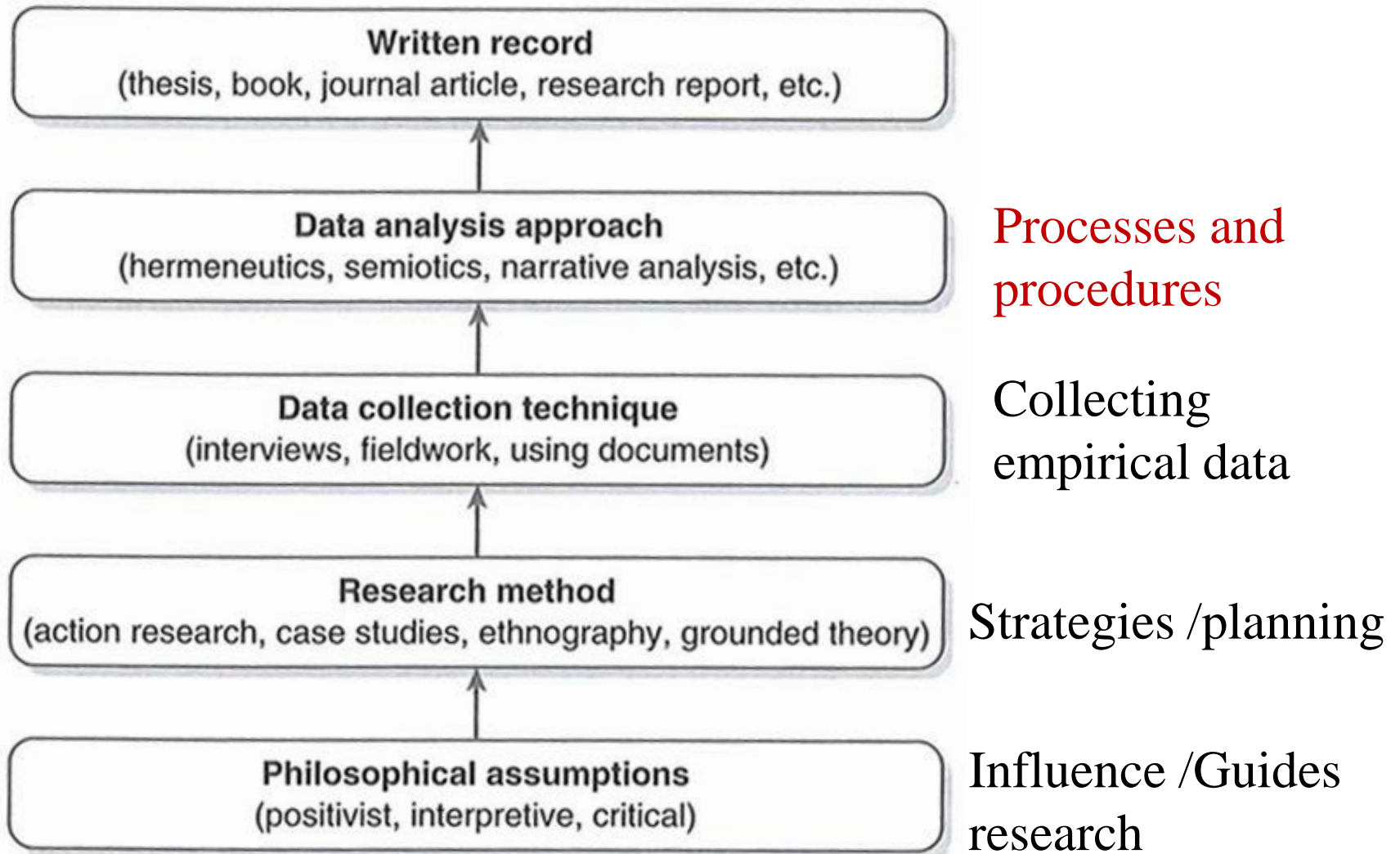
Influence /Guides research

Questionnaire & Data analysis

- Good sized: about 10-15 questions
- Questions with multiple choices
    - Never use choices without "Do not know"
    - No only Yes/No questions
- Equal number of choices
- Open-ended questions –> Qualitative

-> Statistics
-> Text-analysis

Research design - Qualitative

Written record
(thesis, book, journal article, research report, etc.)

Data analysis approach
(hermeneutics, semiotics, narrative analysis, etc.)

Processes and procedures

Data collection technique
(interviews, fieldwork, using documents)

Collecting empirical data

Research method
(action research, case studies, ethnography, grounded theory)

Strategies /planning

Philosophical assumptions
(positivist, interpretive, critical)

Influence /Guides research

Data analysis

- Process of inspecting, cleaning, transforming, and modeling data

- Supporting interpretation, decision making

- Suggesting conclusions

- Highlighting useful information

Data analysis

Attempting to identify any or all of:

- Someone's interpretation of the world
- Why they have a specific point of view
- How they came to that view
- What they have been doing
- How they conveyed their view of their situation
- How they identify or classify themselves and others in what they say

Analytic techniques and Data analysis

Iterative methods for finding similarities
- Analytic induction (1934, Znaniecki)
- Grounded theory (1967, Glaser & Strauss)

- Coding
- Narrative analysis

- Text and document analysis
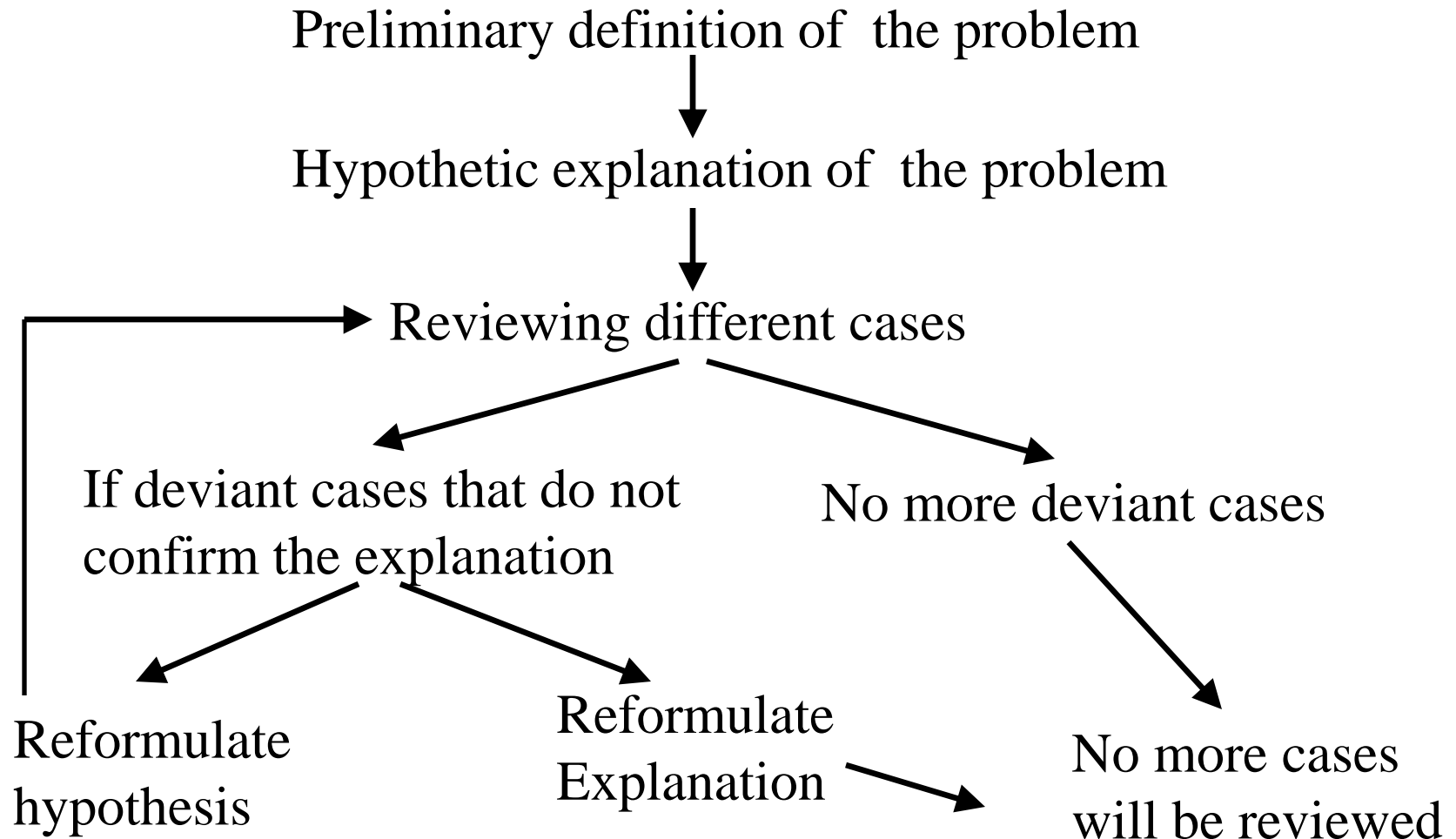 - Semiotic
  - Hermeneutic

Analytic induction

- Iterative - alternating between collection and analysis
- Collect until there are *no cases* that *do not confirm* the hypothesis
- Strive for universal explanations

Problems: Give enough conditions for a situation to occur

- Cannot be certain of getting the necessary conditions – validity problems
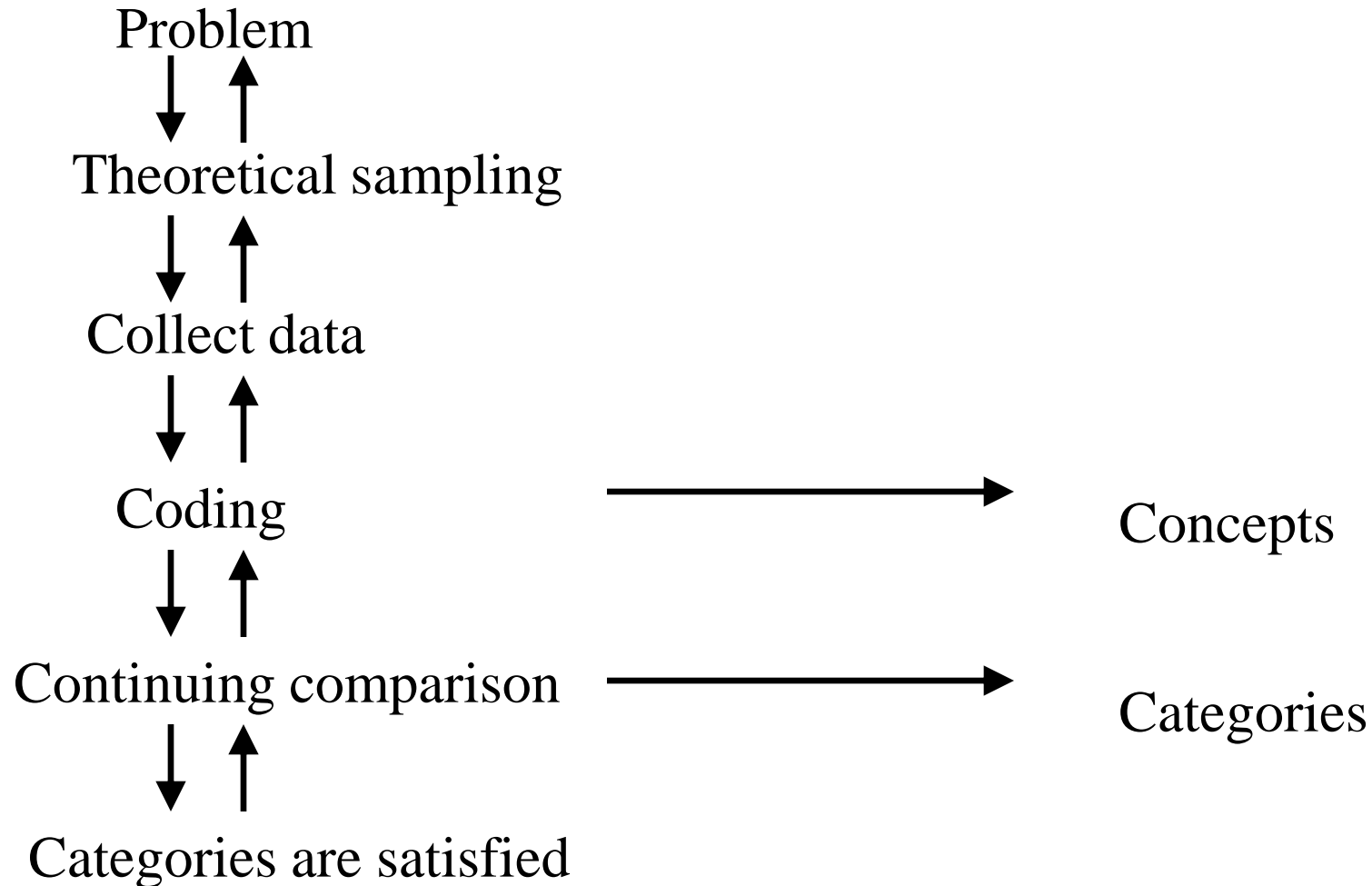
Analytic induction

Preliminary definition of the problem

$\downarrow$

Hypothetic explanation of the problem

$\downarrow$

Reviewing different cases

If deviant cases that do not confirm the explanation

No more deviant cases

Reformulate hypothesis

Reformulate Explanation

No more cases will be reviewed

Grounded theory

- Most popular method
- From initial data, induce $\Rightarrow$ concepts, categories, properties, hypothesis and theory
- Coding - process for breaking data into constituents
- Iterate until - Theoretic saturation:

    - New data does **not** give new information

    - Properties of categories are known
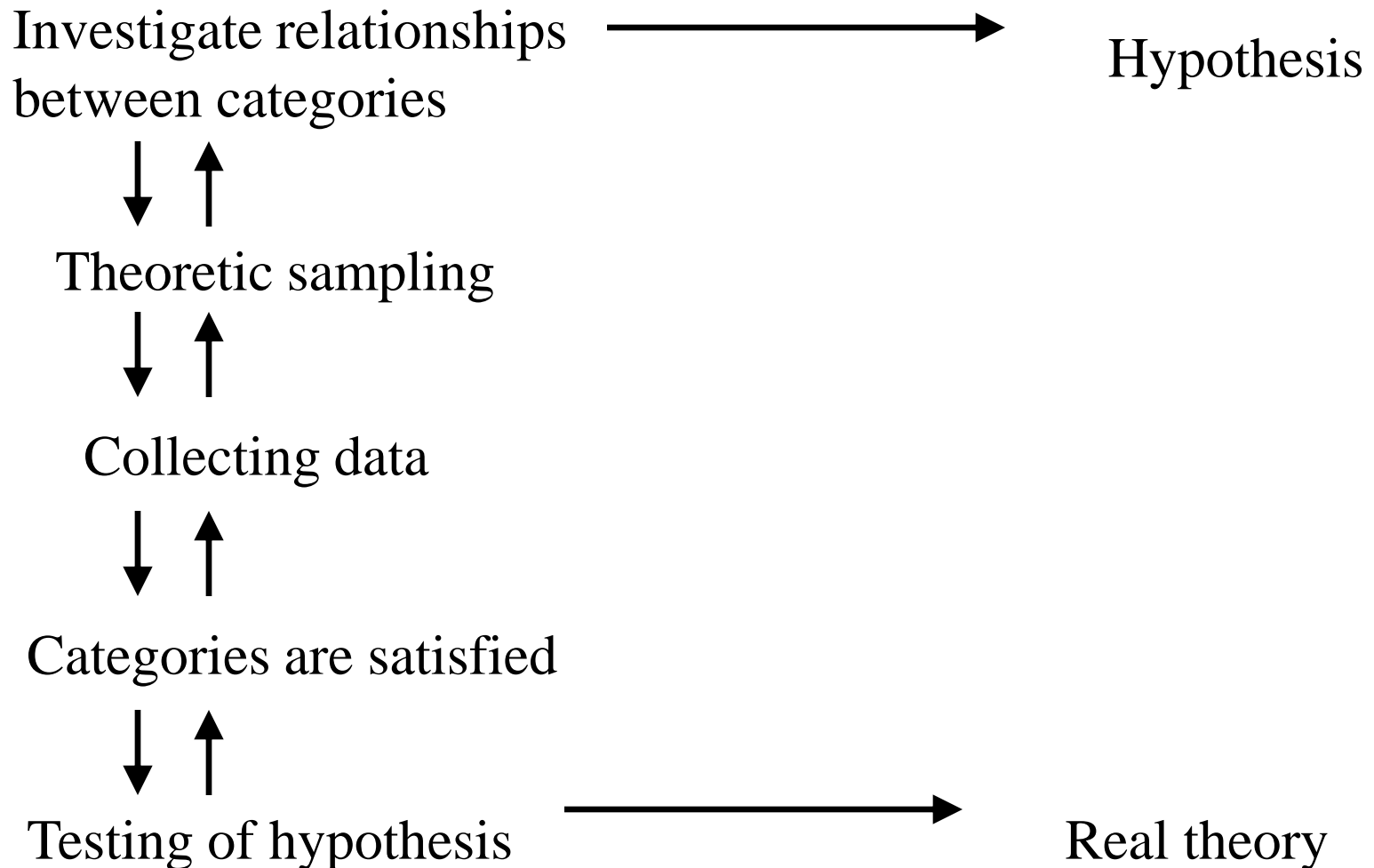
    - Categories are found valid

Problems: Rigorous generation of concepts -> time consuming

Scattered concepts –> difficult to find theory

Grounded theory

Problem

↓ ↑

Theoretical sampling

↓ ↑

Collect data

↓ ↑

Coding → Concepts

↓ ↑

Continuing comparison → Categories

↓ ↑

Categories are satisfied

Grounded theory

Investigate relationships between categories $\longrightarrow$ Hypothesis

$\downarrow$ $\uparrow$

Theoretic sampling

$\downarrow$ $\uparrow$

Collecting data

$\downarrow$ $\uparrow$

Categories are satisfied

$\downarrow$ $\uparrow$

Testing of hypothesis $\longrightarrow$ Real theory

Group work

Interview each other - 4 members / group

Every member has to ask and answer the questions

- One asks
- One answers
- One observes the conversation
- One take notes

Then switch roles!

Total time: 8 minutes

Group work (4 members)

Questions:

1. **What** do you think about study at KTH?
   Answer: XX

2. **Why** do you think XX?

3. **How** did you reach your conclusion?

4. **In what way** do you reason to conclude that studying at KTH is XX?

Group work (4 members)

- Did you **exactly** ask the 4 questions?

- Did you ask **similar** questions? Reformulate?

- Did you talk about other topics?

- How difficult was it to observe others and what did you observe?

- How can you analyse the answers?

Group work (4 members)

- How many groups asked the questions exactly as they were written? *Structured interview*

- How many did not ask the questions exactly as they were written - *unstructured interview*

- How many groups started from asking the questions exactly as they were written - *structured* - then *moved towards unstructured*?

- Did you make any observations?

Reflection

- Are there differences with the choices made by male students and made by female students?

- Is a relationship between opinion and gender?

- Is there a relationship between opinion and reasoning?

$\Rightarrow$ Data analysis

Data analysis

- **Coding** turns qualitative data (texts) into labels and quantitative data (codes)

- **Narrative** is concerned with literary discussion and analysis (stories)

- **Hermeneutics** - primarily concerned with the *meaning* of a text or text-analogue

- **Semiotics** is primarily concerned with the meaning of signs and symbols in language.

Coding

- Put name and labels on parts that seem to be important

- Data are indicators for concepts = Coding

- Distinguish concepts by continuous comparing

Examples: a. Course at KTH – Like – OK - Dislike

b. Marital Status:

1 = Married, 2 = Widowed, 3 = Separated, 4 = Divorced, 5 = Never Married

Narrative analysis

- Narrative – find relationships between different events and context

(Coding gives fragmented information)

- Capture whole stories – time sequences, linear form with beginning and end,
- Have a theme and main point to the story or organisations – see events as part of social life

Examines: diaries, journals, letters

Text and document analysis

- Semiotic - learn about signs, symbols and their meaning and signification

- Everything that can be a sign = words, images, icons, objects
- Find hidden meanings in texts

Example: CV

Text and document analysis

- Hermeneutics - understanding contexts
- Focus on the *meaning of the data*, from textual data
- The data can come from case study or ethnography
- Provide a set of concepts to help analyzing -> understand the meaning
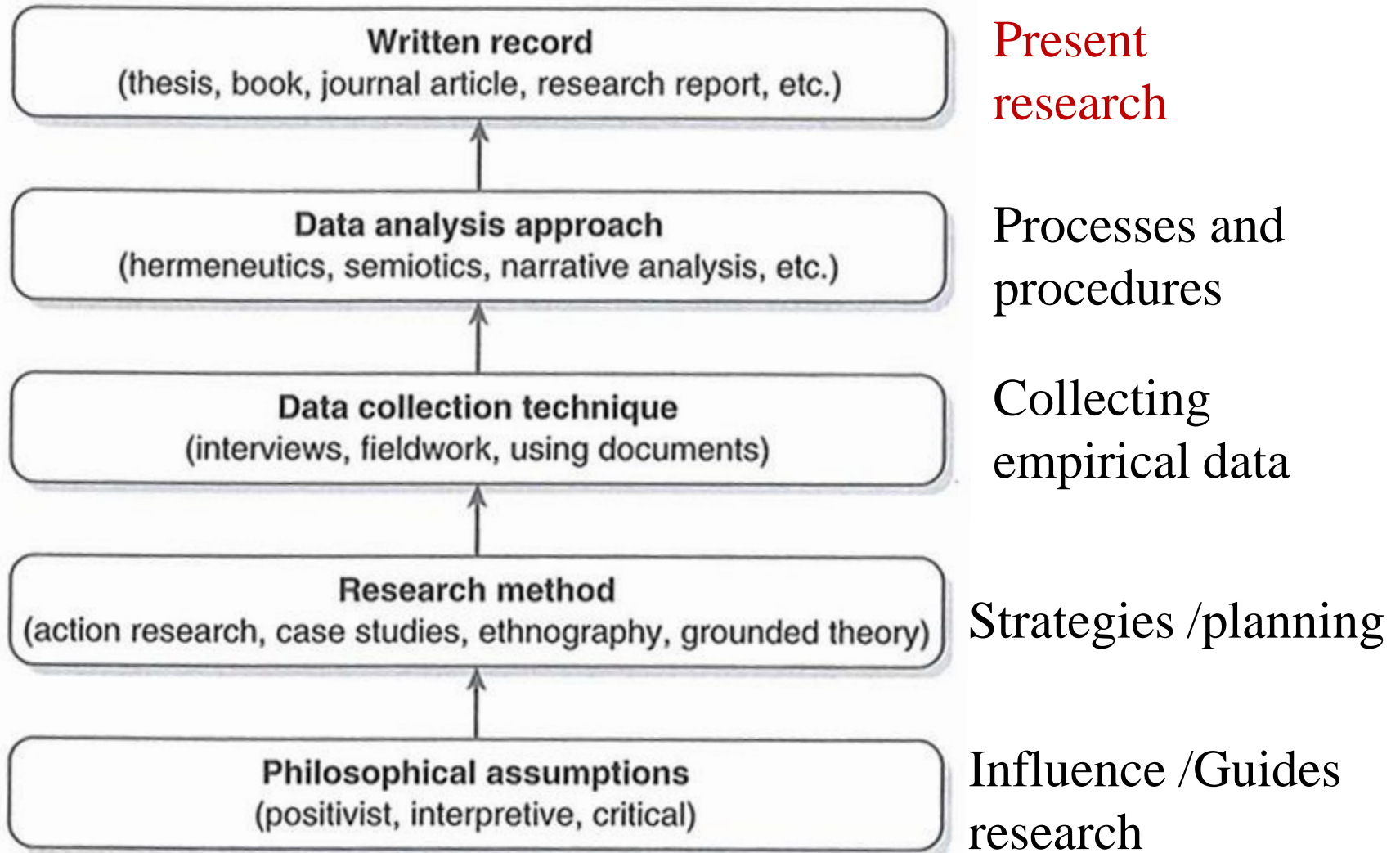   - What people say and what they do

Data analysis

- Generate ungainly data material very fast

- One hour interview
  - $\Rightarrow$ 15 pages
  - $\cong$ 7000 words
- Ten people with one hour each….

Focus:

$\Rightarrow$ what is the meaning of the data?

$\Rightarrow$ how does the data contribute to knowledge in the field?

Research design

Written record (thesis, book, journal article, research report, etc.)	Present research
Data analysis approach (hermeneutics, semiotics, narrative analysis, etc.)	Processes and procedures
Data collection technique (interviews, fieldwork, using documents)	Collecting empirical data
Research method (action research, case studies, ethnography, grounded theory)	Strategies /planning
Philosophical assumptions (positivist, interpretive, critical)	Influence /Guides research

Presentation

Written form - report:

- Choice of research method - quantitative versus qualitative (or triangulation or other)
- Research approach - Deductive versus Inductive (or other)
- *Philosophical Assumption (standpoint)*
- Research method (strategy)
- Data collection method
- Data analysis method
- Quality assurance

- Argument for your choice of methods !

Quality

- *Validation* – arrives at **valid** conclusions. Can be applied on any process.

- *Reliability-* refers to the consistency of a measure. A test is considered **reliable** if the same result is reached.

- *Replication* - the ability of a study to be accurately reproduced, or **replicated**, by someone else working independently

More information

- See *Graham R Gibbs:*
- **Analytic Induction**

  http://www.youtube.com/watch?v=SizaG3KKAp4&feature=related

- **Procedural Analysis**

  http://www.youtube.com/watch?v=1l5HviMHIwQ&feature=related

- **Grounded Theory**

  http://www.youtube.com/watch?v=4SZDTp3_New

- **Grounded Theory - Line-by-line Coding**

  http://www.youtube.com/watch?v=Dfd_U-24egg&feature=related

Questions?