

Lecture 4  
Creating data by asking  
questions  
DHX\_MET1 Methodology 1

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# How to capture phenomena we want to study

- In early exploratory research we gather broad data informing us about the phenomenon, associated phenomena, the context ...
- When we have sufficient theoretical framework indicating which characteristics of phenomena (=variables) are relevant we are trying to „measure“ the variables

# Broad definition of „measurement“

- Gathering of data allowing us to make inferences about the value(s) of researched variable(s)
  - continuous or categorical numeric
  - qualitative
- **Operationalization** of variables
- To be differentiated from measurement *proper* of quantities

In most social-science research we measure (place) variables on

- nominal scales – unordered categories
- ordinal scales – categories ordered by the intensity/quantity of the variable
- interval/ratio scales – closest to quantitative scales with a unit of measurement
  - a number of theoretical problems, but pragmatically it has its heuristic value

# Methods, methods of measurement, measures – procedures for generating data

- In line with continuity and reproducibility of science we tend to use methods used in previous research
- How to choose an appropriate method?
  1. In previous research (see also protocol, paradigm)
  2. In special books
  3. Sometimes we develop our own

# Practically – what constitutes a method?

- Materials, tools, instruments – questionnaire, observation schedule, stimulus material, measurement device/instrument
- Administration procedure – how to use the above to get data
- Coding/Scoring procedure – how to convert raw data to variable values
- Interpretation guidelines – what the variable values mean/represent
- In applied psychology, also norms describing the distribution of values in a relevant population

# How to choose a method?

- Quality of measurement
  - measurement validity and reliability
- Comparability with previous research
- Practicalities
  - time requirements
  - skill requirements
  - financial and other resource requirements
  - availability

# Quality of measurement

Guided by 2 basic questions:

1. Is our measure systematically affected only by the variable we want to measure?

**VALIDITY**

2. To what extent is our measure affected by random effects?

**RELIABILITY**

# ARGUMENTS for VALIDITY

- Theoretical argument – content validation
- Empirical arguments
  - correlation with similar measures – criterial, convergent validity
  - non-correlation with measure of a related but theoretically independent variable – discriminant validity

Never-ending process of validation!



# SOURCES of (UN)RELIABILITY

- Reliability – precision, accuracy, absence of random noise in values
- STABILITY – correlation of repeated measurement
- OBJECTIVITY
  - agreement of the results of administration+scoring/coding by different users
  - quality of standardization
  - intra-class correlations, kappas
- INTERNAL CONSISTENCE
  - many measures try to assess a variable by a number of similar attempts – questions, tasks – generally „items“
  - All items should provide consistent, unconflicting information about the value of the measured variable
  - Cronbach's alpha ... McDonald's omega

# 2 TYPES of METHODS

## OBSERVATIONAL

- OBSERVATION
- PRODUCT ANALYSIS
- TRACES, USAGE DATA
  - INSTRUMENTS
  - EXPERIMENTAL PROTOCOLS
  - PSYCH. TESTS

## ASKING QUESTIONS

- INTERVIEW
- QUESTIONNAIRE
  - RATING SCALES
- ATTITUDE SCALES

# ASKING QUESTIONS - INTERVIEW

It is basically **MEDIATED OBSERVATION**

Interview is a conversation with a specific **PURPOSE - CREATE DATA.**

Interviewing is a **SKILL.**

## **BASIC INTERVIEWING SKILLS**

- **MANAGEMENT** to steer it towards its purpose
- **ASKING** questions (wording, ordering, asking them)
- **LISTENING** to answers (+ taking notes)

# The level of STRUCTURE

To what extent is the course of the interview predetermined, standardized - structured?

- **UNSTRUCTURED** - *What do you think of euthanasia?*
  - Open, broad questions mapping the interviewee's representation of what we want to learn about.
  - Interviewer facilitates production, clarifies, and steers towards the topic
- **STRUCTURED** - *Do you think euthanasia should be legalised or not?*
  - Open or closed questions focusing on narrow aspects - variables
  - Limited, often prepared clarification and facilitation options
- **SEMI-STRUCTURED** - *What do you think about the legalisation of euthanasia? Under what conditions is euthanasia possible?*
  - A series of topics covering research question
  - Like Unstructured, but some ideas are introduced via a question even if the interviewee does not mention them

... INTERVIEW SCHEDULE

# PHASES OF INTERVIEW

- **INTRODUCTION** - interviewer, purpose and topic, confidentiality, recording agreement, rapport
- **WARM UP**- simple, non-threatening questions
- **THE BODY OF THE INTERVIEW**
- **COOL-OFF** - deal with built up tension or questions
- **CLOSURE** - thanks, debriefing, farewell. „Hand on the doorknob“.

# INTERVIEW MANAGEMENT

- Have it WELL-REHEARSED
- PAY ATTENTION, LISTEN, and let it show
- NEUTRALITY
  - Ask calmly, without implying emotions, positive or negative
  - Minimize LEADINGNESS, SUGGESTIVENESS. Do not indicate what you'd like to hear
- Order questions from the general to the more specific (funnel)
- ENJOY, BE INTERESTED

... otherwise - INTERVIEWER BIAS

# PAYING ATTENTION & PROBES

Techniques maintaining rapport - **listening**, response clarifications, probes facilitating further responses.

- **GENERAL PROBES**

- keeping short silence (krátké)
- questioning look
- „mmmmmm“
- repeating response, paraphrasing, summarising
- nodding (verbal & non-verbal)

- **SPECIFIC PROBES**

- Prepared clarification questions, part of interview schedule

# QUESTION FORMATS

## OPEN-ENDED

- Most laborious for respondents
- Most open (sometimes not true)

## CLOSED

- facilitating the understanding of a question and responding
- Multiple-choice
- Rating scales - direct quantification



# QUESTION WORDING TIPS

- **RELEVANCE / FAMILIARITY** r. should be easily able to produce the answer
- **SIMPLICITY / ELABORATION**
- **ASK ONE THING** (x DOUBLE-BARREL), beware of conditions in questions,
- **EASY LANGUAGE**, avoid slang, vague, difficult words
- **AVOID NEGATIVES** especially double-negatives
- **INCLUDE EXPLICITLY BOTH POLES**
- offer „DON‘T KNOW“, anytime it is a plausible response
- **BEWARE** of **CONTEXT** created by previous questions

# 4 PHASES OF RESPONDING TO QUESTIONS

Tourangeau, Rips, Rasinski (2000)

<b>COMPREHENSION</b>	Identify what information is needed Purpose included
<b>RECALL</b> FROM MEMORY	
<b>JUDGEMENT</b>	Developing an answer from recalled material
<b>RESPONDING</b>	Mapping onto a response scale. Decision to produce to response.

# QUESTIONNAIRE

- Questionnaire is an interview standardized so well that it can be self-administered
- All issues with comprehension etc. must be sorted out through **PRETESTING**
- Modes of administration
  - oral/personal, CAPI
  - pen and paper
  - phone, CATI, Skype
  - **online**

# SUMMARY

- Quality of measurement – validity and reliability
- Interviewing as eliciting observations
- Four-phase response process as a cognitive theory of question wording, ordering and other effects
- Questionnaire as a highly-structured interview allowing self-administration

# Reading

- Chapters 7 and 9 plus this presentation.

What's next?

Direct observation and measurement.