Qualitative and Semi-Structured Approaches to Questionnaire Design

Chase H. Harrison Ph.D.
Program on Survey Research
Harvard University
Developing Survey Questions

• Early stage
  – Focus groups to understand topics or dimensions of measures

• Pre-Test Stage
  – Cognitive interviews to understand question meaning
  – Pre-test under typical field conditions

• Field and Post Stage
  – Interviewer evaluations
  – Behavior coding
  – Validation to external data
  – Randomized experiments
Focus Groups

• Qualitative research tool
• Used to develop ideas for questionnaires
• Used to understand scope of issues
• Used to understand contours of findings
• Used to have group evaluate and critique questions and ideas
Focus Groups for Questionnaire Development

- Develop parameters of measures
- Understand typical language and cultural conventions
- Learn about unanticipated responses
Focus Groups

• Small group in structured discussion
• Lead by trained moderator
• Uses 8 – 10 “typical” but talkative respondents
• Homogenous or heterogeneous groups
Moderating Focus Groups

• Develop structured guide for group

• Encourage respondents to think aloud and discuss

• Written exercises can often be used to start group
Disadvantages of Focus Groups

• Group dynamics can play key role

• Moderator needs to be skilled

• Results not necessarily replicatable

• Requires numerous groups for success and understanding
Cognitive Interviews
Cognitive Interviews

• Administering draft questionnaires
• Collecting additional information about responses
• Used to evaluate quality of question
• Used to understand whether question gathers intended information
Cognitive Interviews

• Look at question-answering from respondent’s perspective
  – Understand cognitive strategies used to answer
  – Understand how questions are interpreted
  – Understand how respondents understand concepts
Example of Measure of Chronic Conditions:

<table>
<thead>
<tr>
<th>Question Sequence A:</th>
<th>Question Sequence B:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you now have any physical or medical conditions that have lasted for at least 3 months? (Do not include pregnancy)</td>
<td>In the last 12 months, have you seen a doctor or other health provider three or more times for the same condition or problem?</td>
</tr>
<tr>
<td>In the last 12 months, have you seen a doctor or other health provider more than twice for any of these conditions?</td>
<td>Is this a condition or problem that has lasted for at least 3 months? (Do not include</td>
</tr>
<tr>
<td>Have you been taking prescription medicine for at least 3 months for any of these conditions?</td>
<td>Do you now need to take medicine prescribed by a doctor? (other than birth control)</td>
</tr>
<tr>
<td></td>
<td>Is this to treat a condition that has lasted for at least three months? (Do not include pregnancy or menopause)</td>
</tr>
<tr>
<td><strong>38% have chronic condition</strong></td>
<td><strong>56% have chronic condition</strong></td>
</tr>
</tbody>
</table>

*Source: Fowler, F. J. (2004)*
What Respondents Do to Answer a Question

• Comprehend Question
• Retrieve Information from Memory
• Summarize Information
• Report an Answer
Typical Framework for Evaluating Responses

- Comprehension
- Memory Retrieval
- Information Summarization
- Answer Reporting and Formatting
Two Generally Different Approaches

• Think-aloud
  – Facilitate respondent revealing full thought process

• Active probing
  – Identify specific problems and answer specific questions
Different Approaches for Interviewers

• Standardized:
  – Standardized probes
  – Neutral probing and approach
  – Relies on standardized training: no specific knowledge

• Active:
  – Interviewer modifies script based on evaluation of answering strategies
  – Plays more active role
  – Specialized interviewer functions as investigator
Thinking Aloud

• Protocol analysis based in cognitive labs
• Requires respondents to “Think Aloud”
• Assumes that respondent thoughts are
  – Available
  – Reported accurately
  – Does not change further responses
Thinking Aloud

- Ask respondent to think aloud
- Have respondent give free-form answer
- “What is going through your mind?”
Thinking Aloud

• Often begins with generic question and listens to respondent process of answering

• Models questions and questionnaire structure based on respondent thought processes
  – Examples:
    • Event dating
    • Recollection forward rather than backward
Example: Continuing Survey of Food Intakes by Individuals (CSFII)

• Original Structure:
  – “Starting with the (first/next) time you ate or drank something yesterday…..
    • Time
    • Name of meal
    • Food item
    • Quantity
    • Place eaten
    • Place purchased
  » DeMaio, Ciochetto, and Davis (1994)
Example: Continuing Survey of Food Intakes by Individuals (CSFII)

• Cognitive interviews revealed respondents recalled *food items* more than *occasions*

• Respondents used *multiple strategies to recall* how foods were consumed

» DeMaio, Ciochetto, and Davis (1994)
Example: Continuing Survey of Food Intakes by Individuals (CSFII)

• 1991 Revision:
  – Quick list of everything eaten
  – Naming of time eaten
  – Probing of other foods consumed with quick list
    • Did you have anything else on…..
    • Did you have anything else in…..
    • Did you have anything else with
  – Did you nibble on anything else…..
  – Did you have anything else……
Potential Problems with Respondents
Think Out Loud

- Respondents veer off course or onto tangents
- Respondents focus more on response process than on stimulus of questions
- Process of thinking aloud may change answering process
- Respondents don’t necessarily provide all types of useful information
- Potentially overlooks problems following instructions in self-administered questionnaires
Interviewing with Probes:

• Read question and probe responses
  – “What made you say that?”
  – “Why did you respond that way?”
  – “What does that mean to you?”
  – “Please tell me what I was asking in your own words?”
Example:

• “In the past twelve months, how many times have you seen or talked on the telephone about your physical, emotional, or mental health with a family doctor or general practitioner?”

• Respondent: “Zero”

• PROBES FROM COGNITIVE INTERVIEWER reveal several doctor visits

• “Oh, I thought you said talked to on the telephone.....”

  – Adapted from Beatty (2004)
## Types of Probes

<table>
<thead>
<tr>
<th></th>
<th>Proactive Administration (Initiated by interviewer or administrator)</th>
<th>Reactive Administration (Triggered by subject behavior)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standardized Construction</strong></td>
<td>(1) Anticipated probes</td>
<td>(3) Conditional probes</td>
</tr>
<tr>
<td>(Constructed prior to interview)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Non-Standardized Construction</strong></td>
<td>(2) Spontaneous Probes</td>
<td>(4) Emergent probes</td>
</tr>
<tr>
<td>(Constructed during the interview)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Benefits of Active Probing

• Makes use of expertise
• Likely more value from fewer interviews
• May be useful to generate understanding of types of problems to be included in more standardized phase
• May be better at elucidating rare problems than standardized interviews
Standardized Approaches

• Potentially can be replicated across facilities, languages, and cultures
• Can incorporate experimental manipulations and quantitative comparisons
• Facilitate coding and classification of problems
Examples of Classification:

• Types of Problems:
  – Lexical
  – Temporal
  – Logical
  – etc.

• Response Stage
  – Understanding
  – Task performance
  – Response formatting
  – etc.

» Conrad and Blair (1996)
Standardized Approaches

• Require large number of interviews

• Potentially replicate early mistakes

• Often merge with pilot test phase
Selection of Respondents

- Generally limited to convenience samples
- Relevant population
- Demographic variety
- Should represent diverse patterns – skip and usage – of survey questionnaire
- Extreme cases can help to understand parameters
- Best if done in a number of locations
- Often conducted iteratively with sets of 5 – 15 respondents
Pilot Tests

- Done using realistic field conditions
- Help test interviewer instructions and protocols
- Data often *intensively* recorded and analyzed
- Respondent and interviewer debriefing often conducted
Behavior Coding

• Analyzing responses to survey
  – Comprehension of response
  – Adequacy of response

• Request for reformulation

• Interpretation of question

• Comments and voluntary observations

• Use of “Don’t know”

• Refusal or other non-answer
Paralinguistic Measures

• Coding responses of terms such as:
  – I think
  – I’m not sure
  – Probably
  – Umm....
  – [Silence]
Response Latency

• Length of time to respond is often negatively correlated with
  – Stability
  – Difficulty
  – Accuracy (Current state of Future behavior)

• Measures of response latency used to measure quality of question
Respondent Debriefing

• “When I asked you ..... Did you think you would .....?”
• “Were you still thinking when I asked the next question...?”
• “Did you loose track....?”
• “Were you confused?”
• “Did you feel bored or impatient....?”
• “Is there something that is relevant that you didn’t tell me?”