Cognitive Interviewing Methodology to Study Question Comparability

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Why Cognitive Interviewing?

1. Prior to fielding: “Fix problems”
   - Reduce error
   - Ensure comparability
     - Ensure there is nothing specific to the experiences of those in targeted groups compelling them to interpret a question differently
     - Translations
     - Across demographic and cultural groups
Why Cognitive Interviewing?

2. After fielding: Documentation for data users
   - Development and evaluation process
   - “What the question captures”
   - How resulting data should be used
   - “Road map” for including question on other surveys, in other languages, in other socio-cultural contexts
Why Cognitive Interviewing?

3. To contribute to theory of question response
   - How do 3MC contexts inform question response?
     - Different languages
     - Differing cultural concepts
     - Different experiences due to differing socio-economic contexts
     - Systematic vs. idiosyncratic differences
Question Evaluation Principles

1. The best question design is based on question evaluation, not expert opinion

2. Question evaluation is science-based
   - Empirical Evidence
   - Transparent and Systematic analysis

3. Evaluation studies must be well documented, replicable, and made accessible
Make a case for Cognitive Interviewing Methodology as method for examining comparability of survey questions

Present requirements:
- Analysis: systematic, multi-level analysis
- Data: Ethnographic cognitive interview

Real World Application
- Problems
- Solutions

Federal Guidelines and Standards for Cognitive Interview Studies
Question Response Process

Social Factors

Comprehension → Retrieval → Judgment → Response

Social Factors

Social Factors

Social Factors

Social Factors

Social Factors
Cognitive Interviewing: A Study in Validity

Identifies the constructs captured by individual questions by identifying the specific phenomena that account for respondents’ answers.
Visual Representation of Construct Schema

Question: In general, would you say your health is excellent, very good, good, fair or poor?

- Phenomena Considered by Respondents
  - Health Conditions
    - Pain or Discomfort
    - Physical Limitations
    - Dependence on Medication
  - Health Habits
    - Healthy: Regular Exercise, Proper Nutrition
    - Unhealthy: Smoking, Overeating, Alcohol Consumption
Visual Representation of Construct Schema

Question: Does your child have difficulty hearing?
Cognitive Interviewing: A Study in Comparability

Determines whether constructs are consistently captured across salient respondent groups.
Phenomena Considered by Respondents

Safety of Water
Is the water at school safe?

Occurrence
Does my child drink water during school?

Child's Physical Ability
Is my child physically able to access water at school?

Version 1:
Does my child drink any kind of water during school?

Version 2:
Does my child drink only school water during school?

Version 1:
With assistance, is my child able to access water?

Version 2:
Is my child able to access water without assistance?

United States/English, Jamaica/English: Does your child use drinking water facilities at school?

India/Hindi: क्या (नाम) स्कूल में की पानी पीने की सुविधा को आसानी से इस्तेमाल कर सकता/सकती है?
For 3MC Study

Primary purpose:

1. To identify the various constructs captured by individual questions
2. To determine whether they are consistently captured across groups of respondents.
3. To ensure that there is nothing specific to the experiences of those in targeted groups compelling them to interpret a question differently.

- Analysis
- Data Quality
Requirements of 3MC Study: Analysis

- Analytic goal is central to the design
  - Although particular to data analysis, affects each stage of the study process
- A systematic analysis across all interviews as one data set
- Comparison groups need to be analyzed together as one data set
- Multiple layers of analysis need to be conducted to form explanation
- Enough interviews needed to saturate categories, that is, to ensure that all possible interpretations are discovered
5 Analytic Steps

1. Conducting interviews
2. Synthesizing interview text into summaries
3. Comparing summaries across respondents
4. Comparing identified themes across subgroups
5. Making conclusions
Products of Data Reduction for Analytic Steps

1. Interviewing
   - Cognitive Interview Text

2. Summarizing
   - Summary Notes

3. Comparing Across Interviews
   - Thematic Schema

4. Comparing Across Groups
   - Advanced Schema

5. Concluding
   - Conclusions
Tiers of Theory Building for Analytic Steps

1. Interviewing
   - Individual Response

2. Summarizing
   - Record of Respondent Difficulty
   - Identification of Potential Themes

3. Comparing Across Interviews
   - Identification of “What Question Captures” (Construct Validity)

4. Comparing Across Groups
   - Response Process Differences Across Groups (Bias)

5. Concluding
   - Explanation of Question Performance (Why)
Data Requirements of 3MC Study

- Interview data must be detailed incorporating aspects of respondents’ daily life experience that is part of what they considered in forming an answer

- Data must emerge naturally from respondents’ lives in such a way that phenomena/experiences/data that were not anticipated can emerge

- Data quality: interview notes must be detailed enough to perform meaningful analysis
Goal: To discover why the respondent answered the question the way that they did?

Interviewer Tasks:

- Help the respondent relay the story
- Respondent as story teller vs. evaluator
- Ask the survey question as the enumerator should ask it in the field
- Ask probe questions to fill in gaps or make sense of contradictions
Real World Application
Obstacles

- Inexperienced Interviewers
  - Lack of detailed data collected
  - Lack of detail in notes

- Multiple Languages, keeping track of translations

- Logistics
  - Recruitment
  - Space to conduct interviews
Inexperienced Interviews

- **Training**
  - Told to “collect the story”
  - Pre-reading
  - Presentation including question response theory, findings
  - Watch full interviews

- **Practice**

- **Interview Debriefing**

- **Concurrent analysis, incorporating interviewers into the analysis**

- **Conduct more interviews with understanding that some will not be useful**
Project Information:

This project consists of the data from India, Belize, US, Oman and Montenegro individual projects, so that a cross-national analysis can be conducted.

Project Title: Combined Children’s Disability
Project Leader: GDRL
Date Range: September 2012
Language: English
Topic: Children's Disability

Questions:
- Print Interview Guide
- View all questions

Interviews:
- Add a New Interview
- View All Interviews

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<th>Country</th>
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Total Interviews: 214
Question Notes Entry

Respondent ID: 23  
Interviewer: VHooja 4/1/2016

35 - SchoolType: WHAT IS THE MAIN TYPE OF SCHOOL THAT (name) ATTENDS?  
(नाम) का मुख्य शैक्षणिक स्थल जानता है? सामान्य स्कूल में सामान्य कक्षा में खास कक्षा विकलांग बच्चों के लिए खास स्कूल कोई दूसरा?

Answer:

Regular classroom in a regular school

Interview Notes in Hindi:

बच्चे को लगभग 14 साल पुरानी है और ग्रामीण इलाके में एक नियमित रूप से सरकारी स्कूल में आता है। उन्होंने भारतीय, 15वीं की भाषा में अध्ययन करता है। स्कूल के बारे में 2 किलोमीटर की दूरी पर स्थित है और वह यह तो एक चक पर या एक मोटरसाइकिल पर उतरता है। वह अपने पिता के साथ अपने साथ चलता है।

Interview Notes

The child is almost 14 years old and attends a regular government school in rural area. He studies in Marathi, the language of the state. The school is situated about 2 kilometers away and he is taken there once a week by the respondents (his father) either on a cycle or on a motorbike. Since the child has difficulty sitting independently, his brother usually accompanies them to prevent him from falling. He can only attend once a week as his father cannot take time off from work to take him.

The school has admitted him in the age appropriate class however insists that a family member be there with him. There are 100 children in the class and the respondent does not expect the teacher to be able to look after his son so he takes him to the toilet.

His mother who used to take him earlier now finds it difficult to lift him. The child follows the same curriculum as the rest of the class and also attempts the exams for which he has his brother as a writer. His brother answers the questions because, according to his father, the child probably understands about 20% of what is taught.

On the basis of his brother's answers, however, the child is promoted to the next level.
## Analysis Page

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Methodological Plan

**Standard A.1:** A methodological plan must be developed prior to conducting a cognitive interview study. This includes (but is not limited to) an articulation of the study objective, sampling plan, recruitment of respondents, location of interviews, an interview guide, and type of analysis to be conducted.

Sample Selection

**Standard A.2:** Sample selection for a cognitive interview study must be done in a purposeful way to ensure that the respondents have the characteristics necessary to provide data required to meet the study objectives.
Interview Guide

**Standard A.3:** An interview guide, or interview protocol, is required and must be designed to collect the processes by which a respondent interprets and responds to a question as well as any difficulties experienced by a respondent in providing an answer. Interview guides contain the questions to be evaluated along with interviewer instructions, such as follow up probe questions, for obtaining information needed to meet study objectives. The guide must direct the interview process so that respondents reveal how and why they answered the question as they did.
Systematic Analysis

**Standard A.4:** The data produced must undergo a systematic analysis. A systematic analysis ensures that no particular case is overemphasized and that findings represent the full range of responses. Analysts must examine data within interviews, across interviews (by question) and across subgroups (when appropriate given the purpose of the study) with the goal of identifying thematic patterns in question interpretations and response error.

Transparent Analysis

**Standard A.5:** Analysis of cognitive interviews must be transparent such that study findings can be traced to original data collected in the cognitive interviews.
Final Reports

Standard A.6: The methods used, results obtained, and conclusions drawn must be documented in a final report.

Reporting Results

Standard A.7: Final reports must be made available to the public if cognitive study results are referenced in publications or data collection documentation.
Thank You!