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Analyzing Cognitive Interviews
for Cross-National Studies:
A Case Study from Nepal and China

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Outline

- Background on Analyzing Cross-Cultural Cognitive Interview Data
- Study Details
- Data Preparation
  - Transcription and translation
  - Coding process
- Data Analysis
- Selected Findings
- Challenges
- Lessons Learned

Literature on Analyzing Cross-Cultural Cognitive Interviewing Data

- Various methods
  - Cross National Error Source Typology (CNEST) (Fitzgerald, Widdop, Gray & Collins, 2011)
  - Varying levels of qualitative analysis (Miller, et al., 2011)
  - Mixed method (Miller, Willis, Eason, Moses, & Canfield, 2011)
  - Constant Comparative Method (CCM) (Ridolfo & Schoua-Glusberg, 2011)

- Some considerations for choosing a method
  - Resources
  - Skill level of cognitive interviewers
  - Research goals

Study Details

- The study tested questions for an international household survey on disability
  - Very specific research goals based on previous rounds of testing
  - Testing two series of questions with similar wordings but different constructs
    - How much of a problem do you have with getting your household tasks done? (Functioning)

    - How much difficulty do you have doing household tasks because of your health? (Capacity)

Study Details

- Partners

  – Institute of Social Science Survey (ISSS) of Peking University in Beijing, China

    - Experienced in CI

  – Institute for Social and Environmental Research (ISER) in Chitwan Valley in Nepal

    - No experience in CI

- University of Michigan (UMICH) team developed the CI protocol

- ISER and ISSS staff translated the cognitive interview questionnaire and research protocol

  – UMICH team reviewed the translation with respective teams

Study Details

- UMICH conducted training at sites
  - Cognitive interviewing basics
  - Study background and protocols
  - Question constructs
  - Note taking
  - Coding
  - Analysis

- Mixed CI method
  - Think-aloud with semi-structured, concurrent probes

- Field work: July – September 2014

- 40 interviews were conducted in both Beijing and Chitwan Valley

Data Preparation:
Transcription and Translation

- All interviews were audio-recorded upon respondents' consent

- Interviewers reviewed the audio-recordings and took comprehensive notes in Chinese/Nepali and then translated their notes into English

- UMICH staff reviewed and provided feedback on the notes

- Daily debriefings (while UMICH at site)

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Data Preparation: Coding Process

- Data tables created by UMICH (in previous rounds)
  - Respondent characteristics – age, gender, health conditions and status, helper, and assistive devices
  - Summarized data from interviewer notes
  - Coding scheme
    - Functioning and Capacity questions were coded independently
      - Did R consider helper, aids/assistive devices, medication?
      - Did R answer the question as intended by the construct?
    - Comparing the 'corresponding' question pairs
      - Did R consider same activity for both questions?
      - Did R make cognitive shift (i.e., differentiate) between the series?
    - Did R answer as intended overall?

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			Health and Aids				Functioning			Capacity				Overall MDS Model	
RID	Ver	Summary Notes	Health Conditions	Device	Help	Meds	Survey Response	Did R consider Device Help Meds? Yes; No; No Need; Unclear	As Intended? Yes; No; No Data; Unclear; Other	Survey Response	Did R consider Device Help Meds? Yes; No; No Need; Unclear	As Intended? Yes; No; No Data; Unclear; Other	Same Activity/ Experience Yes; No; No Data; Unclear/Other	Did R Answer and Interpret Func and Cap as the Same Yes; Yes - Not as intended; No; No Data; Unclear; Other	As In... No... Un...
1	A	Respondent description: ___ years old, ___. He reported of taking medications for gastritis but not for his paralysed legs. He has family who helps him to get to the hospital and other places and also in taking medicines.													
1	A	Walking - For the functioning question, R was thinking about walking a short distance with assistance he gets from his family and using the wheelchair and reported 3. For capacity, he reported 5 and talked about his difficulty to walk and climb stairs without others' help.	Back pain, Depression, Gastritis ; and Paralysed legs since the a___	___	Yes	Yes	3	Yes	Yes	5	No	Yes	Yes	No	
1	A	Self-care – For functioning, R was thinking of facilities at his house which had made it easier for him to keep himself clean and dressed. For capacity however, he reported of having no difficulty for washing or bathing considering also the help.	Back pain, Depression, Gastritis ; and Paralysed legs since the age o___	___	Yes	Yes	3	Yes	Yes	1	Yes	No	Yes	No	
1	A	Pain – For functioning, R reported of having extreme problem. R mentioned to have problem in walking due to various pain when probed. For capacity he first mentioned to have extreme problems (5) as he could not do works due to his health but when probed about physical pain, he mentioned of not thinking of pain to avoid depression and asked to change his response to number 3.	Back pain, Depression, Gastritis ; and Paralysed legs since the ___	___	Yes	Yes	5	No Need	Yes	3	No Need	No	No	No	
1	A	Shortness of Breath – For both functioning and capacity, respondent thought about not having any health problems related to shortness of breath.	Back pain, Depression, Gastritis ; and Paralysed legs since the ag___	___	Yes	Yes	1	No Need	No	1	No Need	Yes	Yes	Yes - Not as intended	
1	A	Depression – For functioning, R reports to have such feeling than problem but when probed reported of problems in working when had such feeling. For capacity, he answered about his inability to go out and deal things and left alone at home being sad. That is, R talked about depression because of his physical disabilities.	Back pain, Depression, Gastritis ; and Paralysed legs since the ag___	___	Yes	Yes	High Problem	No Need	Yes	3	No Need	Yes	No	No	
1	A	Cognition – For functioning, R mentioned of having no problems except of rare cases when a person forgets but did not consider it a problem. For Capacity, R mentioned of knowing the fact that he can remember through his experience when probed.	Back pain, Depression, Gastritis ; and Paralysed legs since the age ___	___	Yes	Yes	1	No Need	No	1	No Need	Yes	Yes	Yes - Not as intended	
1	A	Household Tasks – To the functioning question, R mentioned of not doing household works by self but the works are done as per his direction. R however does light works when others are busy. He thought of the outcome. For Capacity, R mentioned of his inability to do things at time of his convenience and requirement of dependency on other for supporting works.	Back pain, Depression, Gastritis ; and Paralysed legs since the age o___	___	Yes	Yes	4	Yes	Yes	5	Yes	No	Yes	Yes - Not as intended	
1	A	Community Activities - For functioning, R answered of having problem as he cannot and feels ashamed to go to relatives during festival. R also mentioned of needing support. For capacity, R thought of same as functioning regarding his inability and needing support to go to events.	Back pain, Depression, Gastritis ; and Paralysed legs since the age ___	___	Yes	Yes	3	Yes	Yes	3	Yes	No	Yes	Yes - Not as intended	
2	A	Respondent description: ___ and uneducated. R has right body parts paralyzed and reported of using walking stick or cane. He also reported of using crutches earlier and requiring extenders if available. He has family members to help him, especially his wife who h...													
2	A	Walking - For functioning, R answered being problematic and thought of the situations if he was not paralyzed. R judged it emotionally deviating from the intention of the question. For capacity, R mentioned of walking with assistance which he should not be thinking in Capacity question.	Less vision, hearing problem, arthritis, back pain, headaches, depression, had suffered from polio in his childhood, skin problem in summer.	Walking Stick/Cane	Yes	No	5	No	No	3	Yes	No	No	No	
2	A	Self-care – R has answered opposite as intended for functioning and capacity questions. For functioning, he answered of needing his wife for self care but because cannot do himself, reported 5. For capacity, he answered easy if people helped him.	Less vision, hearing problem, arthritis, back pain, headaches, depression, had suffered from polio in his childhood, skin problem in summer.	Walking Stick/Cane	Yes	No	5	Yes	No	3	Yes	No	Yes	Yes - Not as intended	
		Pain – R talked only about his pain due to veins problem in functioning while	Less vision, hearing problem, arthritis, back pain, headaches, depression, had												

Coding / Data / Demo / Health Index / Functioning / Capacity / Same Activity / Cognitive Shift / Overall MDS / Survey Answers / Mapping Errors / Data 2

Data Preparation: Coding Process

- Nepal data
  - UMICH staff trained ISER-Nepal staff on coding process and coding themes
  - ISER-Nepal staff performed data reduction and coding
  - UMICH staff reviewed coding on a flow basis
  - ISER-Nepal and UMICH 'met' regularly to review and discuss coding

- China data
  - Native Chinese speaker from UMICH staff reviewed interviewer notes in Chinese and English
  - UMICH staff performed data reduction and coding
  - UMICH staff met regularly to review and discuss coding

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Data Analysis

- UMICH team analyzed data
- Analyzed Nepal and China data independently
  - Question level and respondent level analysis
    - Frequencies
    - Provided examples
    - Provided respondent quotes
  - Examined sub-groups
    - Education
    - Health status
  - Additional analysis conducted on questions outside of original research questions
    - Response scales (numeric, e.g., 1=no problem, 5=extreme problem)

Selected Findings

- Nepal had greater difficulty differentiating between the two series of questions than China (16% vs. 8%)

  – In Nepal, the sample composition consisted of mostly of respondents with no formal education

Selected Findings

- Response scale difficulties
  - Nepal
    - Did not give number - instead used words
    - Switched the end labels
    - Placed themselves in the middle of the scale
    - Picked a number that appealed to them
  - China
    - Placed themselves in the middle of the response scale
    - Would not commit to a single number
    - Could not provide an answer

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Challenges

- Translated notes were not always equal in quality
  - Translation issue or cognitive issue for respondent?
- Multi-sites
  - Sharing data securely
  - Time difference
  - Adjudicating coding discrepancies
- Resource and time constraints
  - Did not have verbatim transcriptions
  - Could not do inter-rater reliability
  - We had to focus the analysis only on the research questions

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Lessons Learned

- Extend initial CI training
  - Practice rounds of note taking
- Establish initial coding theme (when possible) pre data collection and train interviewers on concepts
- Establish quick and easy way to exchange data
- Daily review of notes and coding
- Allow time for iterative approach to coding and analysis

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Thank you!

Literature

- Miller, Willis, Eason, Moses and Canfield, 2005
  - Mixed-method approach – contextual, qualitative data with numerical coding
  - Subgroup (e.g., language groups) differences may be due to interviewer effects
    - More structured approach for cross-cultural CI to minimize error due to interviewer

- Ridolfo and Schoua-Glusberg, 2011
  - Constant comparative method (CCM)
    - Simultaneous, systematic coding and analysis to generate theories
      - Open coding > codes organized into categories > themes of question interpretation and response formation > axial coding > selective coding
    - Important to reach "theoretical saturation"

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Literature

- Fitzgerald, Widdop and Collins, 2011
  - "Rigorous, critical-realistic qualitative approach"
    - Audio recordings > verbatim transcription or detailed note > data reduction > committee approach to analysis
    - Applied Cross National Error Source Typology (CNEST)
      - Error source becomes apparent and aids in questionnaire revision

- Miller et al., 2011
  - Comparative analysis – examine how the survey questions work consistently across countries and subgroups
  - Consider key aspects of methodology – sample composition, selection and recruitment, language equivalence, translation procedures, probing techniques, skill of interviewers, data quality, qualifies findings, and documentation
  - Multilayer analysis – systematic and evidence based

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