

Designing Survey Questions

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OVERVIEW - Designing Survey Questions

- Importance of questionnaire design
- Identify measurement objectives
- Draft questions
- Test questions
- Format questionnaire
- Questionnaire design services - Who can help?

The Importance of Good Questionnaire Design

- Good questionnaire design involves
 - understanding of how you want to analyze data
 - resources (\$\$\$\$), time (can take YEARS!)
 - knowledge of questionnaire design principles
- Why go to all of this trouble?
 - The data ultimately produced from a survey are only as good as the **questionnaire**, sample and data collection process that produced them
 - EXAMPLE(S)


The Effect of Questionnaire Design on Analysis

- Please rate the following attributes of UNC Printing Services:
 - Reception 1-Unsatisfactory
 - 2-
 - 3-Satisfactory
 - 4-
 - 5-Excellent
- 70% of respondents answer 3, 4 or 5
- Why?

The Effect of Questionnaire Design on Analysis (2)

- Do you think the sports media treat African American athletes differently than white athletes?
 - YES
 - NO
 - 60% of respondents answer “YES”
- Do the sports media treat African American athletes and white athletes the same or differently?
 - SAME
 - DIFFERENTLY
 - 40% of respondents answer “DIFFERENTLY”

What does good questionnaire design involve?

- **IDENTIFY MEASUREMENT OBJECTIVES** 
- Draft questions based on objectives
- Test questions
 - Expert review
 - Cognitive interviewing
 - Pilot run
- Format questionnaire

Defining Measurement Objectives (HARD PART!)

- **Specifically** identify measures of interest
 - **(1)** the number of Hershey bars UNC sophomores have consumed in the last month (since February 8)
 - **(2)** the average number of people who attended a UNC basketball game in 1992-1993 season
 - **(3)** % of U.S. adult males attending an opera in the last 12 months

Do you need a survey to meet these objectives?

- Secondary survey data sources
 - Ex. Survey of Public Participation in the Arts **(3)**
 - Census Bureau (www.census.gov), Bureau of Labor Statistics (www.bls.gov)
 - IRSS: www.irss.unc.edu/irss/dataservices/dataservices.html
- Direct observation
 - Ex. Counter/ticket stubs **(2)**
 - Percent of registered voters who actually vote, number of people visiting a web site (hits)
- Need a survey
 - Find similar, previous surveys to help craft questions
 - Use focus groups to gather ideas

Critiquing/Drafting Questions

- Consistently understood (avoid ambiguous words, define key terms)
 - example: term “greenway” - natural biking or walking trail or a pedestrian link between parks
 - avoid “double-barreling” ⚡ (asking two questions at once)
 - DOUBLE-BARRELED: Would you like to be rich **and** famous?
 - avoid hidden assumptions ⚡ (slide 4 - assumes respondent has experience with UNC Printing)
- Consistently administered and communicated to respondents
 - interviewers read all response options (strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, strongly disagree)

Drafting Good Questions (2)

- Indicates clearly what kind of answer is desired
 - NOT CLEAR: When did you move to Questionnaireville?
When I was 20. Right after I graduated. In 1992.
 - CLEAR: In what year did you move to Questionnaireville?
 - Beware of response categories ☂
- Can be answered with the knowledge the respondent has (unless you are trying to measure knowledge)
 - TOO TOUGH: What was your stepfather's interest income for 1999?
 - Help respondent recall (define time period, long question, give cues like who, what, when, where)

Drafting Good Questions (3)

- Respondents are willing to answer
(EXAMPLE: Income ☁ ⚡)
- SENSITIVE: What was your household's total income for all of 1999?
- LESS SENSITIVE: Give ranges
- LESS SENSITIVE: Use an “unfolding” approach (less than 25K, less than 20K, less than 35K, less than 50K)

Critiquing/Drafting Questions: Question-Answering Process

- Comprehension
- Retrieval
- Judgment
- Formatting
- Editing

****R can go wrong at any of these stages****

Question-Answering Process: An Example

- In the past month, that is, since February 8, how many Hershey bars have you eaten?
 - **Comprehend** individual words and sentence (time frame, Hershey bar)
 - **Retrieve** any useful information/experiences (well I usually eat five a week)
 - Make a **judgment** based on information retrieved (4 weeks X 5/week =20)
 - **Format** response using response options (0, 1, 2-4, > 4)
 - **Edit** answer, social desirability (gosh, maybe just 2)

Where can Rs go wrong? (1)

- Comprehension problems (will respondent understand terms? are there troublesome survey terms, like usually, average, you, often?)
- Retrieval problems (will respondent be able to remember that? what cues will help respondent remember?)
- Judgment problems (can respondent accurately estimate what is requested?)

Where can Rs go wrong? (2)

- Formatting problems (will respondent understand response categories? does the format of the options match respondent thinking process?)
- Editing problems (is this a socially undesirable behavior?)

Testing Questions

How do we know if these problems may exist?

- There are many developmental pretesting methods. We'll focus on 3:
 - Expert Review
 - Cognitive Interviews
 - Pilot Run

Expert Review: Overview

- Cognitive experts (in a group or individually) examine the questionnaire for potential problems
- Experts recommend possible remedies (rewording, reordering)
- Experts can recommend testing options
- Experts are cognitive psychologists, survey methodologists, survey researchers with extensive experience in writing and administering questionnaires

Expert Review: Examples

- **SEE HANDOUT**

Cognitive Interviews: Overview

- Respondent is interviewed one-on-one by a trained questionnaire design specialist
- Respondent “thinks aloud” as he answers each question (concurrent verbal protocol)
- Interviewer may ask directed probes after questions (retrospective verbal protocol)

Cognitive Interviews: Structure

- Introduction (**SEE HANDOUT**)
 - Introduce respondent to “think aloud” process
 - Practice “think aloud” approach with a couple of examples (depending on type of respondent)
- Using “think aloud” prompts
 - Tell me what you are thinking
 - Tell me more about that
- Using directed probes (comprehension)

Examples of Directed Probes

- (p. 6, #5) Are you able to think of a "typical work week" or does the number of hours vary substantially from week to week?
- (p. 6, #6) Who were you including here?
- (p. 10, #14) What does "research-based drug prevention strategies and programs" mean to you?

Cognitive Interviews: Planning and Implementation

- Develop a cognitive testing plan
 - Identify goals of cognitive testing
 - Decide on number of respondents (budget, time frame, availability of respondents)
 - Recruiting and scheduling respondents ✨
- Develop cognitive protocol (**SEE HANDOUT**)
 - Contains survey questions and specific probes to be used after survey questions

Cognitive Interviews: Using Protocol

- Protocol is a guide
 - Be flexible
 - Choose probes as you see fit
 - Add probes
 - Follow up on information provided by respondent

Cognitive Interviews: Planning and Implementation

- Conduct interviews (quiet room, tape record, obtain consent)
- Analyze results and recommend changes to instrument
 - Debriefing of cognitive interviewers to compare notes on interviews and identify common problems
 - Write-up of individual interviews (SEE HANDOUT)
 - Summary (SEE HANDOUT)

Pilot Run: Overview

****Want to be at the final refining stage****

- Small scale version - main study (n=20-100)
- Mirror procedures of main study
- Use debriefing form (SEE EXAMPLE)
 - Use behavior coding
 - Question had to be repeated
 - Question had to be explained
 - Debrief respondents
 - Were there any questions that you found awkward, confusing or unclear?
 - Debrief interviewers 🏆

Using Pilot Run Results

- Analyze debriefing forms (SEE HANDOUT)
- Examine your data (mail - missed skips, high rates of missing data, fatigue effects)
- Listen in on some interviews and talk with your interviewers
- Example lessons learned (1999 City of Durham Citizen Survey)

Gosh, I didn't think about formatting! (1)

- CATI (Computer Assisted Telephone Interviewing)/
CAPI (Computer Assisted Personal Interviewing)
Surveys
 - work with programmer to design screens which will be “interviewer-friendly”
 - CAPS for response options not to be read
 - different colors for *questions* and *response options*
- Paper and Pencil Telephone/Face-to-Face Surveys
 - format screening questions, skips for easy administration
 - break pages where convenient for interviewer
 - color-code versions of questionnaire

Gosh, I didn't think about formatting! (2)

- Mail Surveys (richer literature)
 - formatting affects respondent decision to complete the survey (RESPONSE RATE) and data quality
- Principles of “respondent-friendly” design (SEE EXAMPLE & DILLMAN)
 - interesting title page (make R want to look inside)
 - large, easy to read fonts (Arial)
 - instructions (keep brief, easy)
 - lots of white space throughout (not so much length, but how long does it look?)

Gosh, I didn't think about formatting! (2)

- More Principles of “respondent-friendly” design
 - use simple headings to help R navigate through the survey
 - questions in **bold**, response options regular font
 - response options slightly indented
 - use double-column format, where possible
 - use check-boxes, where possible
 - use underlining to emphasize particular words
 - use arrows for skip instructions

Questionnaire Design Services - Who Can Help

- IRSS
- UNC Survey Research Unit