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Designing Measures

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Session II

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Survey: Definition

“A survey is a systematic method for gathering information from (a sample of) entities for the purposes of constructing quantitative descriptors of the attributes of the larger population of which the entities are members.” *Groves et al. Survey Methodology 2009*

Constructing Good Survey Questions

1. Developing good survey questions is not easy.
2. Characteristics of Good Survey Questions:
 - Easy to understand
 - Do not demand too much effort from respondents
 - Provide good measures [*validity & reliability – discussed later*]

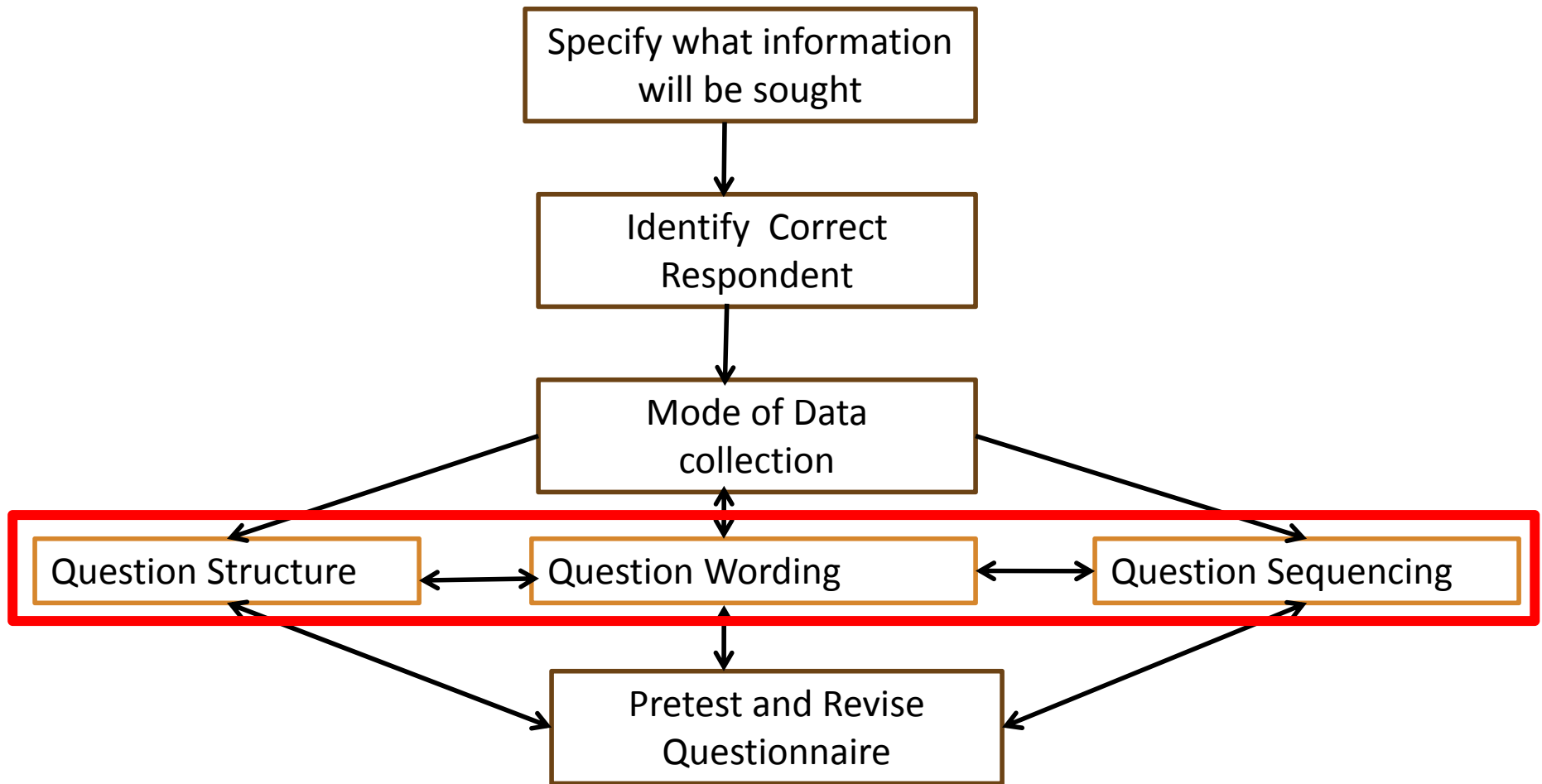
Initial Planning ~ Prior to Writing any Questions (pt. 1)

- Define specific aim (s) of the study: every item in questionnaire should contribute to study aims
- Detailed list of the information to be collected and concepts to be measured
- Analysis plan (outline of how every item will be analyzed – levels of measurement)
- Review the literature and existing surveys

Initial Planning ~ Prior to Writing any Questions (pt. 2)

- The question-and-answer process should be entirely scripted so that the questions as written fully prepare a respondent to answer questions.
- The question should mean the same thing to every respondent.
- The kinds of answers that constitute an appropriate response should be communicated consistently to all respondents.

Initial Planning ~ Prior to Writing any Questions: Overview



Questionnaire Development: Evaluating Draft Survey Questions

- *Expert Reviews*: Applying guidelines derived from survey construction literature.
- *Focus Groups*: Semi-structured discussions with respondents to explore what they know about issues covered in the survey.
- *Cognitive Interviews*: Follow-up probes to learn how respondents understand questions.
- *Field Pretests*: Small number of interviews with draft questionnaire.
- *Split-Ballot Experiments*: Wording experiments.

Source: Groves, Fowler, Couper, Lepkowski, Singer, and Tourangeau

Questionnaire Development: Focus Groups

- **Advantages of Focus Groups:**
 - Advantage: Efficient method of determining what potential respondents know about survey topics.
 - Advantage: Good method for determining what terms respondents use in discussing topic.
 - Advantage: Provides a range of experiences and perceptions.
- **Disadvantages of Focus Groups:**
 - Disadvantage: They are not representative of survey population.
 - Disadvantage: They are not an efficient way to evaluate question wording.
 - Disadvantage: Results are often unreliable and hard to replicate.

Source: Groves, Fowler, Couper, Lepkowski, Singer, and Tourangeau

Questionnaire Development: Cognitive Interviewing

- Definition: Administering draft survey questions while collecting additional verbal information about the survey responses (Beatty 2003).
 - *Purpose:* To evaluate quality of responses, or help determine if question is generating the intended information.

Potential Uses of Cognitive Interviewing

- Respondent elaboration of how they constructed their answers
- Respondent interpretation of what the question means
- Construct validity and reliability [*all of this discussed in more detail later*]

Source: Beatty & Willis 2007

Two Approaches to Cognitive Interviewing

- “Think Aloud” Approach:
 - *Definition:* Interviewer encourages respondent to verbalize thoughts as he or she is responding to the question.
 - Example: “Tell me what you are thinking as you answer this question.”
- Probing Approach:
 - *Definition:* Interviewer is more proactive and seeks to understand how respondent interprets the question as well as why a particular response is provided.
 - Example: “Can you tell me in your own words what that question was asking?”

Evaluating Different Types of Cognitive Interviewing

- “Think Aloud” Approach:
 - Advantage: Relatively standardized (i.e., too much probing can make survey process artificial).
 - Advantage: Little training required for interviewer
- Probing Approach:
 - Advantage: Some respondents unable to verbalize thought processes effectively (i.e., probing can compensate for this)
 - Advantage: Can provide focus to interview
 - Advantage: Provides useful information that might not be revealed with “think aloud” process
- More Information: Beatty, Paul C., and Gordon B. Willis. 2007. “Research Synthesis: The Practice of Cognitive Interviewing.” *Public Opinion Quarterly* 71(2): 287-311

Question Structure: Open Ended Questions

1. Example: “What do you think is the most important problem facing the country today?”

Advantages

- Fewer limits imposed by researcher
- Ideal when you cannot be sure of universe of possible responses

Disadvantages

- Respondents may say too much or too little
- Time, effort, and imprecision of coding open-ended responses
- Construct validity and reliability *[all of this discussed in more detail later]*

Question Structure: Close-end Questions

Example: “In general, would you say that you are very interested, somewhat interested, indifferent, or not interested at all in museums?”

Most of my comments today will apply to close-ended questions.

Question Structure: Close-ended Questions

Advantages:

- Easy to answer and takes little time
- quicker/easier to respond to, responses easier to analyze
- Answers can be pre-coded (assigned a number) and easily transferred to a computer
- Answers are easy to compare
- provided pre-selected responses often help clarify the meaning of the question

Disadvantages

- May not be accurate – forces people to accept categories or puts too many people into other categories
- Respondent's choice not among listed alternatives
- Choices listed communicate kind of responses wanted
- Wording of response choices may influence responses

Question Structure

2. Closed-end question

- Response options should be **exhaustive** [include all possible answers]
- Response options should be **mutually exclusive** (i.e., the categories should not overlap)
 - Example: “Please indicate which age category best describes you.”
 - 18 – 20, 20 – 25, 25 – 30, 30 – 35, 35 – 40, 40 – 45, 45 - 50
 - 18 – 20, 21 – 25, 26 – 30, 31 – 35, 36 – 40, 41 – 45, 46 - 50



Question Wording

Wording questions to gain what is wanted
and to be understood by all respondents

Suggestions...

Question Wording

Suggestions (1) – Use Complete Sentences (Avoid Inadequate Wording)

Trying to keep questions simple and concise may result in questions that are too vague.

Age?



What was your age on your last birthday?

Reason last saw doctor?



What was the medical problem or reason for which you most recently went to a doctor?

Question Wording

Suggestions (2) – Use Clear Wording

Words such as regularly and occasionally may mean different things to different people.

Examples of vague terms include:

MAJORITY [more than half of what?]

OFTEN [daily, twice, weekly?]

OLDER PEOPLE [how old?]

Question Wording

Suggestions (3) – Include All Necessary Information

In some cases, respondents may not know enough to adequately answer the questions.

Do you support or oppose the country's new environment policy?

Provide a statement summarizing points of the policy that briefly describe the policy.

Question Wording

Suggestions (4) – Avoid Double-barreled Question

Two questions written together give no opportunity for people to respond in favor of one part or the other.

EXAMPLE: Please rate your satisfaction with the implementation and enforcement of your school's dress code?

This question combines two issues (implementation and enforcement). You should split the question into two and ask about each issue separately.

Question Wording

Suggestions (5) – Avoid Poorly defined terms

BKF1. Did you eat breakfast?

- 1 Yes
- 2 No

BKF1. For our purposes, let us consider breakfast to be a meal, eaten before 10:00 in the morning, that includes some protein such as eggs, meat, or milk, some grain such as toast or cereal, and some fruit or vegetable, including juice. Using that definition, did you have breakfast?

- 1 Yes
- 2 No

Question Wording

Suggestions (6) – Avoid Bias in Questions

Such questions produce misleading answers.

NON1. How would you rate the housing in which you live?

- 1 Satisfactory
- 2 Good
- 3 Excellent

Problem: Only positive options provided.

SGG1. More farmers in District A are using Superb than any other variety of wheat. Do you use Superb?

- 1 No
- 2 Yes

Problem: Respondent encouraged to provide “yes” answer.

Thought Exercise: Designing Measures

- Using the handouts, please answer a few questions about designing survey measures.
- Take a few minutes, and then we will discuss your answers as a group.

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Thought Exercise: Designing Measures

- “Most people agree that one of the most important goals for this country is trying to make our cities and villages more beautiful. What about you? Do you think that making the cities and villages in this country more beautiful is extremely important, very important, somewhat important, not very important, or not at all important?”

Thought Exercise: Designing Measures

- “Most people agree that one of the most important goals for this country is trying to make our cities and villages more beautiful. What about you? Do you think that making the cities and villages in this country more beautiful is extremely important, very important, somewhat important, not very important, or not at all important?”
- **Suggested Answer: The first sentence biases the question. Instead of telling the respondents what “most people” think, you should just ask what they think about the issue.**



Thought Exercise: Designing Measures

- Do you exercise a lot?

Thought Exercise: Designing Measures

- Do you exercise a lot?
- **Suggested Answer: This question is imprecise and vague. It is unclear, for example, what time frame the respondent should use to answer the question.**
“During a typical month, how often do you exercise? Would you say that you exercise almost every day, several times a week, once a week, once a month, or never?”



Thought Exercise: Designing Measures

- In general, how well do you think young people drive in Qatar?

Thought Exercise: Designing Measures

- In general, how well do you think young people drive in Qatar?
- **Suggested Answer: The term “young people” is vague. The question should be precise about what the term is supposed to mean. “In general, how well do you think people under the age of 30 drive their cars in Qatar? Do you think they drive extremely well, very well, moderately well, not very well, or not well at all?”**



Thought Exercise: Designing Measures

- Do you own a smart phone?

Thought Exercise: Designing Measures

- Do you own a smart phone?
- **Suggested Answer: The term “smart phone” may not be known to some of your respondents. The term should be defined, and examples can also be helpful. “Some phones, such as an iPhone, a Blackberry, an Android phone, a Windows phone, or a Palm, are called ‘smart phones’ because of certain features they have. Do you own a smart phone, a cell phone but not a smart phone, or do you not own a cell phone at all?”**



Thought Exercise: Designing Measures

- In general, how satisfied are you that your child's school teaches good manners and discipline?

Thought Exercise: Designing Measures

- In general, how satisfied are you that your child's school teaches good manners and discipline?
- **Suggested Answer: This question is double-barreled. It should be broken down into two questions instead of one. "In general, how satisfied are you that your child's school teaches good manners? Are you extremely satisfied, very satisfied, somewhat satisfied, not very satisfied, or not at all satisfied?" "In general, how satisfied are you that your child's school teaches good discipline? Are you extremely satisfied, very satisfied, somewhat satisfied, not very satisfied, or not at all satisfied?"**



Acquiescence Bias

Defining Acquiescence Bias

- Definition: Tendency for respondents to agree with a question or provide a positive answer, even when this does not reflect their “true” attitude.
- Acquiescence Bias is a form of Response Bias and is most likely to arise in questions using the following format:
 - Agree-Disagree Formats
 - Yes-No Formats
 - True-False Formats

Examples of Acquiescence Bias

1. I think my local newspaper reports the news objectively.
 - A. Strongly agree
 - B. Agree
 - C. Disagree
 - D. Strongly disagree

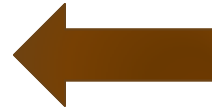
2. I am satisfied with my job.
 - A. Yes
 - B. No

3. Overall, I would rate my personal financial situation these days as excellent.
 - A. True
 - B. False

Examples of Acquiescence Bias

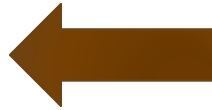
1. I think my local newspaper reports the news objectively.

- A. Strongly agree
- B. Agree
- C. Disagree
- D. Strongly disagree



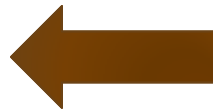
2. I am satisfied with my job.

- A. Yes
- B. No



3. Overall, I would rate my personal financial situation these days as excellent.

- A. True
- B. False





Reasons for Acquiescence Bias

Norms of Conduct: Be polite and agreeable

Status Differential: Defer to higher status

Satisficing: Hypothesis confirmation bias

Acquiescence Moderators

Income (Social status)

Education

Cognitive skills

GPA

Cognitive energy (Task persistence)

Knowledge about the topic

Need for cognition (Lower = more acquiescence)

Language difficulty (More = more acquiescence)

More Acquiescence Moderators

Ambiguity of meaning (More = more acquiescence)

Speed (Faster presentation = more acquiescence)

Question placement (Later = more acquiescence)

Anonymity (more acquiescence under anonymity)

Age (Older people acquiesce more)

Gender (women acquiesce more)

The Effects of Acquiescence Bias

Form A

Individuals are more to blame than social conditions for crime and lawlessness in this country.

Agree: 59.6%

Disagree: 40.4

100
(473)

The Effects of Acquiescence Bias

Form A

Individuals are more to blame than social conditions for crime and lawlessness in this country.

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100
(473)

Form B

Social conditions are more to blame than individuals for crime and lawlessness in this country.

The Effects of Acquiescence Bias

Form A

Individuals are more to blame than social conditions for crime and lawlessness in this country.

Agree: 59.6%

Disagree: 40.4

100
(473)

Form B

Social conditions are more to blame than individuals for crime and lawlessness in this country.

Agree: 56.8%

Disagree: 43.2

100
(472)

Alternate Ways of Asking Questions

1. I think my local newspaper reports the news objectively.
 - A. Strongly agree
 - B. Agree
 - C. Disagree
 - D. Strongly disagree

Alternate Ways of Asking Questions

1. I think my local newspaper reports the news objectively.
 - A. Strongly agree
 - B. Agree
 - C. Disagree
 - D. Strongly disagree

OR

1. In your opinion, how objective is your local newspaper? Would you say your local newspaper is very objective, somewhat objective, not very objective, or not at all objective?
 - A. Very objective
 - B. Somewhat objective
 - C. Not very objective
 - D. Not at all objective

Alternate Ways of Asking Questions

2. I am satisfied with my job.

A. Yes

B. No

Alternate Ways of Asking Questions

2. I am satisfied with my job.

- A. Yes
- B. No

OR

2. Overall, how satisfied are you with your job? Would you say that you're very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied?

- A. Very satisfied
- B. Somewhat satisfied
- C. Somewhat dissatisfied
- D. Very dissatisfied

Alternate Ways of Asking Questions

3. Overall, I would rate my personal financial situation these days as excellent.
 - A. True
 - B. False

Alternate Ways of Asking Questions

3. Overall, I would rate my personal financial situation these days as excellent.
- A. True
 - B. False

OR

3. Overall, how would you rate your own personal financial situation these days? Would you say you are in excellent shape, good shape, fair shape or poor shape financially?
- A. Excellent
 - B. Good
 - C. Fair
 - D. Poor



The Secret:

Find the Hidden Variable

Source: Krosnick 2008



The nurses treated me with respect.

Source: Krosnick 2008



The nurses treated me with respect.

How respectfully did the nurses treat you?

Extremely respectfully


Very respectfully

Moderately respectfully

Slightly respectfully


Not respectfully at all

Source: Krosnick 2008



The staff worked together as a team to coordinate my care.

Source: Krosnick 2008



The staff worked together as a team to coordinate my care.

How well did the staff work together as a team to coordinate your care?

Extremely well

Very well

Moderately well

Slightly well

Not well at all



I would recommend the hospital to family and friends who need emergency care.



I would recommend the hospital to family and friends who need emergency care.

If your family or friends need emergency care, how likely are you to recommend that they (go/not go) to the hospital?

Extremely likely

Very likely

Moderately likely

Slightly likely

Not likely at all

Source: Krosnick 2008

Conclusion

- If possible, try to avoid the following question formats:
 - Agree, disagree
 - Yes, no
 - True, false

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Thought Exercise: Acquiescence Bias

- Using the handouts, please answer a few questions about acquiescence bias.
- Take a few minutes, and then we will discuss your answers as a group.

Thought Exercise: Acquiescence Bias

- Please indicate whether you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree with the following statement. Sometimes doctors take unnecessary risks in treating their patients.

Thought Exercise: Acquiescence Bias

- Please indicate whether you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree with the following statement. Sometimes doctors take unnecessary risks in treating their patients.
- **Suggested Revision: “How often do you think that doctors take unnecessary risks in treating their patients? Would you say that doctors take unnecessary risks in treating their patients always, most of the time, about half of the time, once in a while, or never?”**

Thought Exercise: Acquiescence Bias

- Please indicate whether the following statement is true or false. I trust my doctor's judgments about my medical care.

Thought Exercise: Acquiescence Bias

- Please indicate whether the following statement is true or false. I trust my doctor's judgments about my medical care.
- **Suggested Revision: "How important is your doctor's judgment when making decisions about your medical care? Would you say that your doctor's judgment is extremely important, very important, somewhat important, not too important, or not at all important when making decisions about your medical care?"**

Thought Exercise: Acquiescence Bias

- Please answer yes or no to the following question. Aside from attending services, in the past six months have you been an active member at your place of worship --- I mean, have you done things like serve on committees, give time for special projects, or help organize meetings?

Thought Exercise: Acquiescence Bias

- Please answer yes or no to the following question. Aside from attending services, in the past six months have you been an active member at your place of worship --- I mean, have you done things like serve on committees, give time for special projects, or help organize meetings?
- **Suggested Revision: “Aside from attending services, how active have you been at your place of worship in terms of such things as serving on committees, giving time for special projects, or helping to organize meetings? Would you say that you have been extremely active, very active, moderately active, slightly active, or not active at all?”**