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DESIGNING YOUR QUESTIONNAIRE

The first step in designing a questionnaire is to clearly define the topic of your study. A clear, concise definition of what you are studying will yield results that can be interpreted unambiguously. Results from surveys that do not clearly define the topic area may be confusing. It is also important to have clear, precise operational definitions for the attitudes or behaviors being studied. Behaviors and attitudes that are not defined precisely may also yield results that are confusing and difficult to interpret. For example, the "Sex in America" survey (Michael, Gagnon, Laumann, & Kolata, 1994) used an extremely broad definition of "sex" as *any* genital contact or sexual arousal, even if intercourse did not take place. Although such a broad definition may have advantages such as including same-sex as well as opposite-sex sexual activity, it has drawbacks as well (Stevenson, 1995). For example, because the "Sex in America" survey made no distinctions between levels of sexual activity, the results are difficult to interpret with respect to other surveys on sexual behavior (Stevenson, 1995).

Having a clearly defined topic has another important advantage: It keeps your questionnaire focused on the behavior or attitude chosen for study (Moser & Kalton, 1972). You should avoid the temptation to do too much in a single questionnaire. Trying to tackle too much in a single survey leads to an inordinately long questionnaire that may confuse or overburden your participants. It may also make it more difficult for you to summarize and analyze your data (Moser & Kalton, 1972). Your questionnaire should include a broad enough range of questions so that you can thoroughly assess behavior, but not so broad as to lose focus and become confusing. Your questionnaire should elicit the responses you are most interested in without much extraneous information.

The type of information gathered in a questionnaire depends on its purpose. However, most questionnaires include questions designed to assess the characteristics of the participants, such as age, sex, marital status, occupation, income, and education. Such characteristics are called *demographics*. Demographics are often used as *predictor variables* during analysis of the data to determine whether participant characteristics correlate with, or predict responses to, other questions in the survey.

Other nondemographic questions can also be included to provide predictor variables. For example, attitude toward abortion might be used to predict voter preference. In this case, attitude toward abortion would be used as a predictor variable.

In addition to demographics and predictor variables, you will also have questions designed to assess the behavior of interest. For example, if you were interested in predicting voter preference, you would include an item on your questionnaire to specifically measure that variable. That item, or a combination of several items, would constitute the *criterion variable*.

Selecting the Questionnaire Format

The questions to which your participants will respond are the heart of your questionnaire. Take great care to develop questions that are clear, to the point, and relevant to the aims of your research, and take the necessary time to develop good items. The time spent in this early phase of your research will pay dividends later. Well-constructed items are easier to summarize, analyze, and interpret than poorly constructed ones. The sections that follow present some information on how to develop good questionnaire items.

Types of Questionnaire Items Items on your questionnaire can be of several types. Two types that you might consider are the **open-ended item** and **restricted item** (or close-ended item). Open-ended questions allow the participant to provide a response in his or her own words. Such information may be more complete and accurate than the information obtained with a more restricted question format. A drawback to the open-ended question is that participants may not understand exactly what you are looking for, or may inadvertently omit some answers. Thus the participants might give an answer that does not provide the needed information. Another drawback to the open-ended question is that summarizing your data can be difficult. You must decide how to classify different answers. When you must interpret what the participant says, you run the risk of misclassifying answers.

A restricted question with ordered alternatives provides alternatives in a logical order. This is illustrated in one of the questions from the questionnaire used in the "Sex in America" survey:

About how often did you have sex during the past twelve months?

Not at all	0
Once or twice	1
About once a month	2
Two or three times a month	3
About once a week	4
Two or three times a week	5
Four or more times a week	6

Note how the alternatives for this question go from low frequency (*Not at all, Once or twice* in twelve months) to high frequency (*Four or more times a week*). Also, for

this item, as shown, the participants would respond by circling the number that corresponded to their choice. Other methods for recording choices are also used with restricted items. For example, you could have provided a blank space before or after each alternative in which the participants could check off their choice.

Ordered alternatives are used whenever alternatives lend themselves to such ordering. When they don't, close-ended questions with unordered alternatives are used, as illustrated in this item from the "Sex in America" survey:

Have your sex partners in the last twelve months been

Exclusively male	1
Both male and female	2
Exclusively female	3

Because there is no inherent order to the alternatives, other orders could have just as easily been used.

Restricted items provide control over the participant's range of responses by providing specific response alternatives. These responses are, therefore, easier to summarize and analyze than the responses to open-ended items. However, the information you obtain from a restricted item is not as rich as the information from an open-ended question. Participants cannot be specific or elaborate on their responses. Also, you may fail to include an alternative that correctly describes the participant's opinion. So the participant may choose an alternative that does not really fit.

The **partially open-ended item** is designed to deal with these problems by providing an "other" category and an opportunity to specify an answer, as shown in this item from the "Sex in America" survey:

Who introduced you to [your partner]? Circle all that apply.

Family	1
Mutual friends or acquaintances	2
Coworkers	3
Classmates	4
Neighbors	5
Introduced self or partner introduced self	6
Other (SPECIFY) _____	7

Dillman (1978) has several suggestions for formatting questions. He suggests using uppercase and lowercase characters for the stem of a question and all uppercase letters for response category labels. This helps respondents keep your question separate from the response categories that follow. However, you could also format response categories in uppercase and lowercase letters, as was done in the "Sex in America" survey examples presented earlier. Dillman also suggests using blank spaces or numbers to the left of each response category to identify each category. Alternatively, as was done in the "Sex in America" survey, numbers can be placed to the right of each response category. As you can see, there are many ways to

format questions for your questionnaire. Choose a method that best fits the needs of your research.

In addition to the suggestions just made, there are others that will make your questionnaire items better (Dillman, 1978). These are as follows:

1. Clearly specify what you are asking for.
2. Provide alternatives that cover as wide a range as possible. It is helpful to see what other researchers have included.
3. Make your alternatives as specific as possible.
4. Include an "other" category, and provide a space for the participant to specify what the "other" is.
5. Provide a blank space in which participants can elaborate on or qualify an answer.

Rating Scales A variation on the restricted question uses a rating scale rather than response alternatives. A rating scale provides a graded response to a question:

How much does your partner enjoy spending time with you?

1	2	3	4	5	6	7	8	9	10
Very Little									Very Much

There is no set number of points that a rating scale must have. A rating scale can have as few as 3 and as many as 100 points. However, rating scales commonly do not exceed 10 points. A 10-point scale has enough points to allow a wide range of choice while not overburdening the participant. Scales smaller than 10 points are also used frequently, but you should not go below 5 points. Many participants may not want to use the extreme values on a scale. Consequently, if you have a 5-point scale and the participant excludes the end points, you really have only 3 usable points. Scales ranging from 7 to 10 points leave several points for the participants, even if participants do avoid the extreme values.

You must also decide how to label your scale. Figure 7–1 shows three ways you might do this. In the first example, only the end points are labeled. In this case the participant is told what are the upper and lower limits of the scale. Such labeled points are called *anchors* because they keep the participant's interpretation of the scale values from drifting.

With only the end points anchored, the participant must interpret the meaning of the rest of the points. In the second example, all the points are labeled. In this case the participant knows exactly what each point means and may consequently provide more accurate information.

You may be wondering whether labeling each point changes the way the participant responds on the scale. The answer seems to be a qualified no. When you develop a measurement scale, you are dealing with (1) the psychological phenomenon underlying the scale and (2) the scale itself. Labeling each point does not

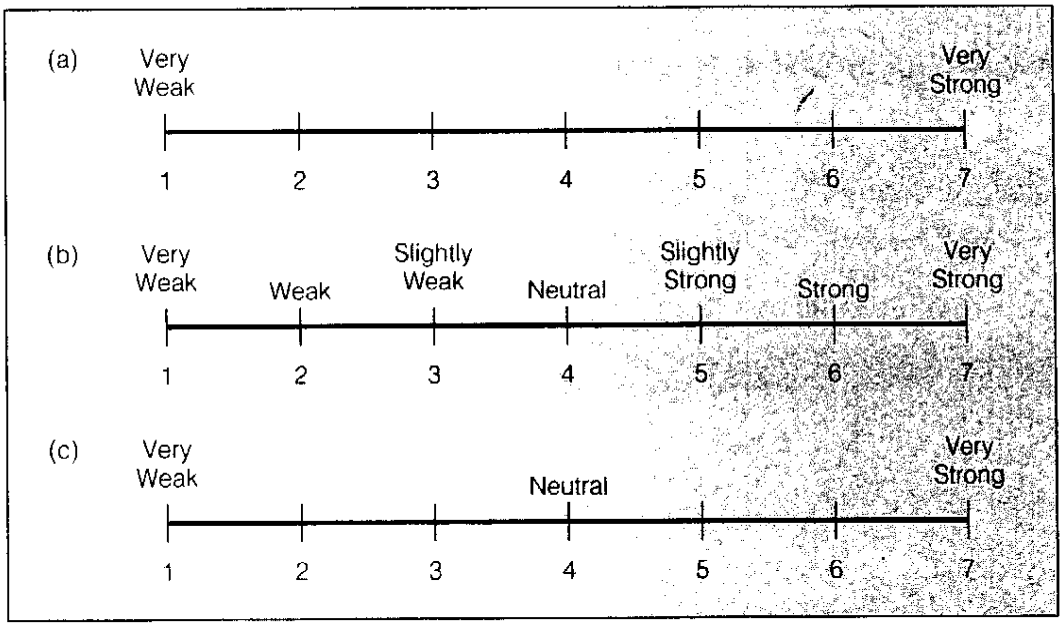

Figure 7–1 Three Ways of Labeling a Rating Scale: (a) end points only, (b) each point labeled, (c) end points and midpoint labeled

change the nature of the psychological phenomenon underlying the scale. You can assume that your scale, labeled at each point, still represents the phenomenon underlying the scale. In fact, researchers have sometimes expressed a misguided concern about such scale transformations (Nunnally, 1967). Minor transformations of a measurement scale (such as labeling each point) probably do not affect its measurement properties or how well it represents the underlying psychological phenomenon being studied.

The third example in Figure 7–1 shows a scale labeled at the end points and at the midpoint. This scale provides three anchors for the participant. This scale is a reasonable compromise between labeling only the end points and labeling all the points.

In the previous examples, participants respond by checking or circling the scale value that best represents their judgments. Alternative ways to format your scale provide participants with more flexibility in their responses. Figure 7–2 shows an example where the end points are anchored and the participants are instructed to place a check or perpendicular line on the scale to indicate how they feel. This method allows participants to choose intermediate values along the scale. Hence

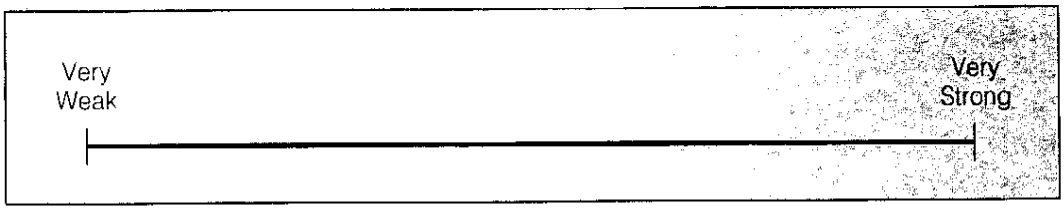

Figure 7–2 Rating Scale Formatted With No Numbers. End points are labeled, and participants place marks on the line to indicate their responses.

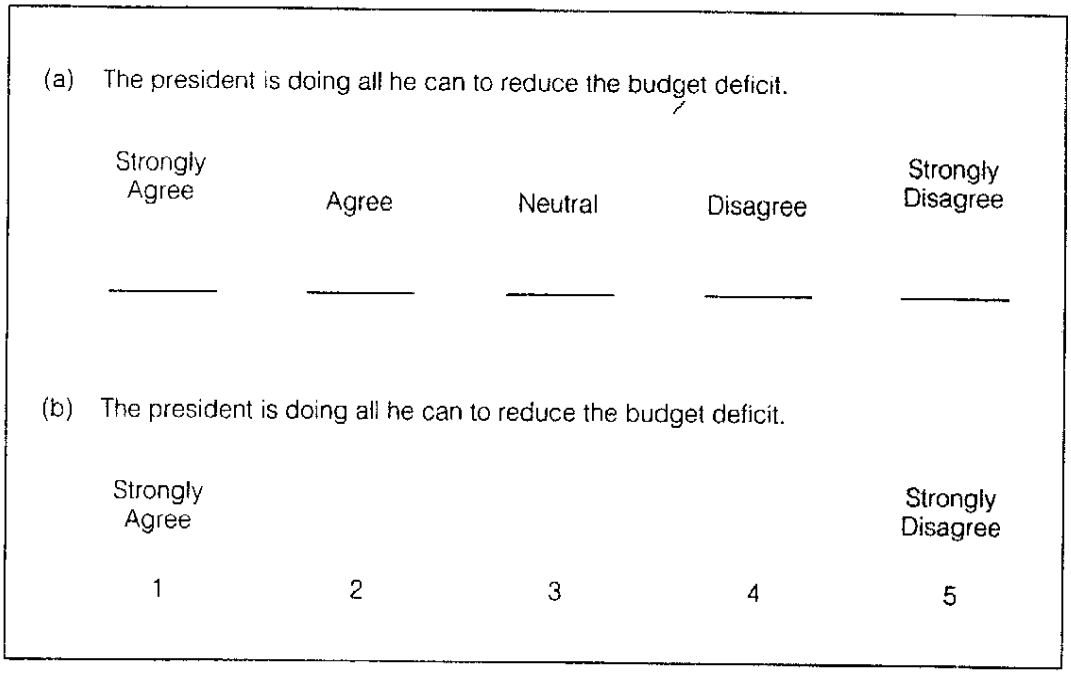

Figure 7–3 Samples Showing Likert Scales: (a) a standard Likert item where the participant places a check in the blank under the statement that best reflects how he or she feels; (b) Likert-type scale using a 5-point rating scale

the information obtained from the second example may be more precise. To interpret the responses, you simply use a ruler to measure from an end point to the participant's mark. Your scale is then expressed in terms of inches or centimeters, and the resulting numbers are treated just like the numbers on a numbered scale.

Another variation on the rating scale is the *Likert scale,* which is widely used in attitude measurement research. A Likert scale provides a series of statements to which participants can indicate degrees of agreement or disagreement. Figure 7–3 shows two examples of formatting a Likert item. In the first example the attitude statement is followed by five blank spaces labeled from *Strongly agree* to *Strongly disagree.* The participant simply checks the space that best reflects the degree of agreement or disagreement with each statement. The second example shows a Likert item using a continuous rating scale rather than blank spaces. In this case participants are instructed to circle the number that best reflects how much they agree or disagree with each statement. For further information on Likert scaling, see Edwards (1953).

A final note on rating scales is in order. Although rating scales have been presented in the context of survey research, be aware that rating scales are widely used in experimental research as well. Adapting rating scales to your particular research needs is a relatively simple affair. Anytime your research calls for the use of rating scales, you can apply the suggestions presented here.

Writing Questionnaire Items Writing effective questionnaire items that elicit the information you want requires care and skill. You cannot simply sit down, write

Table 7–1 Making Simpler Substitutions for Complex Words—Examples

Complex Word	*Simpler Substitution*
Acquaint	*Inform* or *tell*
Assist	*Help*
Candid	*Honest*
Consider	*Think*
Courageous	*Brave*
Employment	*Work*
Exhausted	*Tired*
Initiate	*Begin, start*
Leisure	*Free time*
Major	*Important, chief, main*
Purchase	*Buy*
Preserve	*Protect*
Require	*Need, want*
Reside	*Live*
Sufficient	*Enough*
Terminate	*End*
Virtually	*Nearly*

SOURCE: After Moser & Kalton, 1972, and Dillman, 1978.

several questions, and use those first-draft questions on your final questionnaire. Writing questionnaire items involves writing and rewriting items until they are clear and succinct. In fact, once you have written your items and assembled your questionnaire, it should be administered to a pilot group of participants matching your main sample to ensure that the items are reliable and valid. After establishing reliability and validity on the small sample, you then administer your questionnaire to your main sample. Here are a few things to keep in mind when writing questionnaire items.

First, keep the wording of your items simple. Questions with complex words may not be understood by all participants, especially if the participants are poorly educated (Dillman, 1978; Moser & Kalton, 1972). If a word you are considering has more than six or seven letters, a simpler alternative is probably available. Table 7–1 presents some of the simpler substitutions suggested by Moser and Kalton and by Dillman.

However, you need not always use a simpler substitution. If the complex word conveys your meaning better than a simpler one, use the complex word—especially if doing so simplifies the sentence.

Second, strive to make your questions precise, but not overly precise. A precise question elicits only the information in which you are interested. Consider the following examples:

Vague: "What should Congress do about the budget deficit?"

Precise: "What should Congress do in the areas of tax reform and budget cutting to reduce the deficit?"

Too Precise: "How much should Congress cut taxes to reduce the budget deficit?"

The first example allows too much latitude in the response, as participants could say just about anything in response to the question. The third example limits your participants to recommending a specific amount of tax reduction, which may not be what you want. The "precise" example asks participants to comment on specific ways to cut the deficit, but does not overly restrict their responses.

Third, avoid biased wording. Your wording should not communicate a point of view to your participants:

Biased: "Do you think pornography is vile and disgusting?"

Unbiased: "What do you think about pornography?"

The first example leads the participant to an answer, whereas the second does not. In addition, participants may refuse to answer objectionable questions. Compare these two questions:

Objectionable: "How many times per week do you drink alcohol?"

Unobjectionable: "Which of the following best describes how many alcoholic beverages you drink per week?"

___ None ___ 1 to 2 ___ 3 to 5 ___ More than 5

The first question puts the participant on the spot. The participant may be a heavy drinker and not want to admit it. The second question allows the participant to give you fairly precise information without forcing the issue. Dillman suggests that when you are dealing with a particularly sensitive topic (such as sexual preferences or theft), you may have to use a series of questions. (See Dillman, 1978, p. 107, for an example.)

Dillman (1978) discusses several guidelines for item construction. First, do not use uncommon abbreviations or phrases in your questions. For example, many participants may not know that *APA* stands for *American Psychological Association*. Second, questions that are too demanding may confuse your subjects. For example, it may just be too much to ask participants to rank-order 50 universities. Third, your questions should have a precise time referent so that responses given by participants at different times of the year (July versus December, for example) will be equivalent. For example,

Poor referent: How many times this year did you play golf?

Better referent: How many times did you play golf in 1995?

Fourth, items should ask for only one thing at a time, especially when you are using restricted items. Avoid double questions; for example,

Double question: Should the president support an income tax increase or a gasoline tax increase?

___ YES

___ NO

Better: Should the president support an income tax increase?

___ YES

___ NO

Finally (fifth), avoid questions that include a negative, because they are confusing:

Negative: Should the president not nominate a conservative for a federal judge position?

___ YES

___ NO

Better: Should the president nominate a conservative for a federal judge position?

___ YES

___ NO

For more suggestions on phrasing questionnaire items properly, see Dillman (1978) and Moser and Kalton (1972).

Assembling the Questionnaire

A collection of questions does not make a questionnaire. The questions must be organized into a coherent, visually pleasing format. This process involves paying attention to the order in which the questions are included and to the way in which they are presented.

Dillman (1978) and Moser and Kalton (1972) agree that demographic items should not be presented first on the questionnaire. These questions, although easy to complete, may lead participants to believe the questionnaire is boring. Instead, Dillman suggests leading with questions that have social importance. These questions capture the interest of the participants and may induce a high completion rate.

Your questionnaire should have continuity; that is, related items should be presented together. This keeps your participant's attention on one issue at a time, rather than jumping from issue to issue. Your questionnaire will have greater continuity if related items are grouped. An organized questionnaire is much easier and more enjoyable for the participant to complete, factors that may increase completion rate (Dillman, 1978).

Continuity also means that groups of related questions should be logically ordered. Your questionnaire should read like a book. Avoid the temptation to skip around from topic to topic in an attempt to hold the attention of the participant. Rather, strive to build "cognitive ties" between related groups of items (Dillman, 1978).

The order in which questions are included on a questionnaire has been shown to affect the responses of participants. For example, McFarland (1981) presented questions on a questionnaire ordered in two ways. Some participants answered a general question before specific questions, whereas others answered the specific questions first. McFarland found that participants expressed more interest in politics and religion when the specific questions were asked first than when the general questions were asked first. Sigelman (1981) found that question order affected whether or not participants expressed an opinion (about the popularity of the president) but only if the participants were poorly educated. Hence, question order may play a greater role for some participants than for others. Carefully consider your sample and the chosen topic when deciding on the order in which questions are asked.

The placement of items asking for sensitive information (such as sexual preferences or illegal behavior) is an important factor. Dillman suggests placing objectionable questions after less objectionable ones. Once your participants are committed to answering your questions, they may be more willing to answer some sensitive questions. You need not save all the objectionable questions for the end. Instead, try to salt the objectionable questions through the rest of your questionnaire while adhering to the previous principles of order (Dillman, 1978).

In addition to order, pay attention to the format of your questionnaire. Avoid visually confusing your participants. The questions should be carefully and logically laid out on your questionnaire. It is a good idea to establish a "vertical flow" to your questionnaire (Dillman, 1978); that is, have the blanks preceding response categories of a restricted item line up in a vertical line down the page. This format helps reduce the chance that a participant will inadvertently skip a question. Participants should not have to skip all over a page to answer questions. Provide concise instructions on how to answer your items. For example, tell participants to check a box, place a check on a line, or circle a number. Finally, include a short transition statement between groups of related questions to introduce the topic of the next group of questions. Such transition statements help establish a flow for your questionnaire and hold your participants' interest (Dillman, 1978).