General Principle for Designing Good Survey Instruments

“The strength of survey research is asking people about their firsthand experiences: what they have done, their current situations, their feelings and perceptions. Avoid asking questions about which people do not have informed answers.” – Fowler (1998)
What is a good survey question?

- A good question is one that produces answers that are reliable and valid measures of something we want to describe.
  - Reliability = consistency
  - Validity = Does it measure what it was designed to measure?

Perhaps the most cost-effective way of increasing the quality of our surveys is to design good questions and answer choices.
Five basic characteristics of good questions and answers:

1. Questions need to be consistently understood
2. Questions need to be consistently administered and communicated to respondents
3. What constitutes an adequate answer should be consistently communicated
4. All respondents should have access to the information to answer the question accurately (unless the measurement of knowledge is the goal of the question)
5. Respondents must be willing to provide the answers
An important part of survey research is the evaluation of survey questions:

There are two kinds of evaluation:

1. Evaluation of how well the questions meet the above standards (through process approaches such as focus groups, cognitive interviews, and field tests)

2. Evaluation of the validity of the answers that result

We’ll have to skip over these issues, but turn our attention to the writing of good items.
Question Objectives

• Just as you have research questions, hypotheses, and objectives to guide the overall research plan, you also need to think through the issue of developing objectives for each question.

• The question objective refers to deciding what kind of information you want.
  – Designing the question to achieve the objective has to be thought through carefully.
The overall point is that question objectives can be defined only within the context an analysis plan and a clear view of how the information will be used to meet the set of overall research objectives.
Consider two objectives: *age* and *income*

- **Objective:** *Age*

  How old were you on your last birthday?
  On what date were you born?

  *In this case, the answers should be similar*
Objective: Income

How much money do you make per month on your current job?
How much money did you make in the last 12 months from all paid jobs?
What was the total income for you, all family members living with you in your home, from jobs and from other sources during the last calendar year?

You get different answers by the different questions. Each might be okay, depending on what you want to know. In the above example, the question objective needs to be more specific.
We now deal separately with two kinds of questions:

Questions that deal with factual data

Questions to measure subjective states
Questions That Deal with Factual Data
Definitions of Concepts and Terms in a Question

Two approaches to ensuring consistency in how the respondents understand the question:

1. provide a complete definition of key terms and concepts

With long definitions you may need to break down into several questions…

2. provide all information needed so the respondents can properly answer

For example:
For example, when you know there is a potential confusion:

Suppose your objective is to find out about people’s weekly consumption of butter. If we know that people confuse butter and margarine consumption, we could ask

“*In the past week, not counting any margarine you may have eaten, how many days did you have butter?*”
Knowing and Remembering

- Once you know that all the respondents understand the question the same way, you still need to consider whether they have the information needed to answer the question and are willing to answer it.

- Possible problems:
  1. The respondent may not have the information needed.
  2. The respondent may have known in the past, but may have forgotten.
  3. The respondent may recall, but have trouble putting into the proper time frame.
Examples showing these problems

1. How many rolls of paper towels have you bought in the past year?
2. When you six years old, did your parents ever spank you?
3. In the last two months, have you purchased products manufactured in Japan?
4. How many miles is your house from Gallaudet?
Knowing and Remembering

• In addition, your respondents must be *willing* to answer the questions. Otherwise you will get inaccurate responses. Examples:

  How old are you?
  Have you ever cheated on an exam?
The Form of an Answer

Most questions specify the forms the answers are supposed to take. The form of the answer must fit the answer the respondent is prepared to give.
Potential Problem Questions:

On days where you drink any alcohol at all, how many drinks do you usually have?

Comment: Questions about "usual" behavior are very common. They work best if there is not much variability.

How old are you?

Comment: Works well for some groups, but not for others. You might consider changing the form of the answer to categories in such situations.
Reducing the Effects of Social Desirability

Accuracy is sometimes distorted by the tendency of people to answer in ways that will make them look better or avoid making them look bad. This phenomenon is called social desirability.
Reducing the Effects of Social Desirability

Sometimes surveys ask questions to which the answers could pose a threat to the subject:

“How many extramarital affairs you may have had in the last year?”

(In this case, respondents will not report accurately if they feel that their answers may be disclosed)
Reducing the Effects of Social Desirability

There may be times when answering the question accurately may be at odds with how the respondent wants to think about himself or herself.

Example: Questions about drug use may be sensitive to people who may not want to admit they take drugs.

The issue is not so much about "sensitive questions" as "sensitive answers".

People vary. A question about drinking and driving is not sensitive to someone who does not drink.
To Reduce the Effects of Social Desirability:

1. Ensure confidentiality or anonymity
2. Emphasize the importance of accuracy
3. Use self-administration rather than interviews
4. Also, in designing the questions,
   – Explain the purpose of the questions
   – Phrase the questions in as neutral a way as possible.
Questions to Measure Subjective States
Questions to Measure Subjective States

Many survey questions seek to get information about the perceptions, feelings, opinions about themselves or others. The basic task for the respondent is to place answers on a continuum. In these, there are no right or wrong answers, because there are no "objective" standards against which answers can be measured. We must depend on the answers themselves.

A good subjective question has all of the same characteristics as a good objective question.
In writing a subjective question, we need write questions so that answers can be placed on a continuum. We need to:

1. Define for respondent what is to be rated
2. Show the dimension or continuum the rated object is to be placed on
3. Make clear the characteristics of the continuum
Defining what is to be rated:

It is important that all respondents should be answering the same question. Small differences in wording can have a big effect on the result.

“Do you consider crime to be a big problem, some problem, or no problem at all?”

Comments: Crime is a very general term. What kind of crime? Where?
Defining the nature of the response:

- There are different strategies for evoking answers from respondents. The most common is to put answers on a continuum.
Rating Scales: Putting Answers on a Continuum

Questions can differ in ways that respondents are asked to use the continuum:

“Overall, how is your health: excellent, very good, good, fair, or poor?”

“Consider a scale from 0 to 10, where 10 represents the best your health can be, where 0 is the worst your health can be, and the other numbers represent health states in between. What number would you give your health today?”

“Overall, would you say you are in good health?”

(Each has its strengths and weaknesses. You need to assess which you will use in terms of the purposes of the study and on how you intend to analyze the data.)
Rating Scales: Two major questions about the categories

1. How many categories?
2. Numbers or adjectives?
Example showing different numbers of categories:

Consider the question: “Rate the job President Clinton has done as President:”

Possible approaches to the answers:

1. Good Not Good

2. __Excellent __Very Good
   __Good__Fair__Poor

3. 10 9 8 7 6 5 4 3 2 1 [with 10 being “excellent” and 1 being “terrible”]
General guidelines about number of categories:

- There is a practical limit on how many you many categories you can name and distinguish
  - Also, there are limits as to the number of distinctions that respondents can make. Previous research suggests that 10 is the maximum number of labeled categories that respondents can use
  - 5 - 7 categories may be better
    - In a telephone interview, 3 or 4 may be the maximum

Overall, to the extent that valid information can be obtained, more categories are better than fewer
Rating Scales: Numbers or Adjectives?

• The advantage of adjectives is that all points are calibrated by words
  – The disadvantages are that it is hard to think up adjectives for more than 5 or 6 categories.
  – Also, if you are doing a cross-cultural study, the adjectives may not translate well

• The advantage of using numbers is that they are easy to use and keep in mind
Agree-Disagree Format

You can use an agree-disagree format instead of a rating continuum

But, be careful:

“My health is good:

__Strongly agree __Agree __Neutral __Disagree __Strongly Disagree”

(This is ambiguous. Why?)
Ranking:

This format can be used when you want respondents to compare objects on some dimension:

“Which presidential candidates do you prefer: Gore Bush Nader Buchanan”
Four approaches to ranking:

Give respondents a list and ask them to rank order the list
(Okay if list is short and if you have opinions about the choices; not good otherwise)

Give respondents a list of options and ask them to name the most extreme:
“From the list, pick the two you prefer most.”
(Easier than rank ordering when the list is long. Also, sometimes this is all you need to know.)

Ask people to make a series of paired comparisons: Bush with Gore, Bush with Nader, Nader with Gore, etc.
(Very time consuming, but psychometricians love!)

Give the respondents a list and ask them to rate each using a scale
(In other words turn the ranking into a rating task—often the best solution!)
Narrative (open-ended) answers:

Use when:

- You don't want or don’t know how to limit the answers
- The list of possible answers is very long or not known
- Giving people a choice might bias the results
  
  You see the choice written down and it suggests an answer to you even though it’s not that important to you
Narrative (open-ended) answers:

But, narrative answers are hard to analyze and they are time consuming for the respondents to fill out.

If the survey is not interesting to the respondents, many respondents will simply leave the narrative answers blank.
Topics I wish we had time for:

• How to evaluate questions before we include them in our survey…
• How to design items with an understanding of how they will be analyzed
Acknowledgment

The outline used here and many of the ideas come directly from the excellent chapter by Floyd Fowler in Bickman and Rog (1998).