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How to develop good closed-ended survey questions and response options



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Designing a good survey

- A good survey should:
 - Ask questions that allow you to find out as much as possible about your area of research.
 - Do not use more questions than you need to address your research question.
 - Use standardized, relevant questions that can be understood by your respondents.
 - Avoid bad question design, such as the use of biased and leading questions.

Designing a good survey

- A good survey should:
 - Be consistent in phrasing.
 - Avoid using too many different question types.
 - Keep questions brief.
 - Use plain, easy-to-understand language.
 - Minimize ambiguity in question and response options.
 - Use a clear, legible font: e.g. Arial 11 or 12 point.
 - Format your survey consistently: e.g. **bold**/*italic*.

Standardized Survey Structure

1. Title your survey form
2. Note the version number
3. Give a brief introduction
4. Number individual questions
5. Include contact information
6. Thank respondents for participating

Layout and Sequencing

- Don't include too many questions per page:
 - This looks intimidating and may harm your response rate.
- Question order can be important: keep it in mind. (e.g. ask open-ended items first)
- Questions should go from general to specific and from easy to hard:
 - *Exception*: Consider saving demographic details for the end.

Surveys should be understandable

- Survey questions and instructions should be clear.
- **Jargon** and complicated wording should be avoided.
- Response categories should always offer a **'don't know' option**:
 - Without a 'don't know' option, respondents may provide inaccurate guesses or select a survey response that does not match their true views.

Unintended Cues can Influence Responses

- Cues that you give to respondents can affect opinions and thoughts they report.
- Be careful not to influence responses by accidentally hinting about your expected outcomes, etc.



Unintended Cues

- Unintended cues can be imbedded in:
 - the way questions are written,
 - survey layout,
 - whether other people are nearby with a verbally administered survey,
 - who is collecting the data,
 - what data collectors are wearing, etc.

Response Categories

- Unclear questions or confusing response options may result in respondents:
 - Guessing.
 - Selecting a ‘neutral’/‘don’t know’ option.
 - Not answering the question.
- Pilot-testing will help reduce this:
 - Ask test respondents for feedback (any feedback is better than nothing).
 - Use feedback to refine questions.
 - Repeat if necessary.



QUESTION DESIGN

How to write your survey

Question Design

- When designing your survey questions you need to decide:
 - The overall focus of your questions.
 - The type of question response.
 - The content and phrasing of your questions.



Question Types

- There are a broad range of question types than be used in survey design:
 - Open-ended
 - Classification or demographic
 - Ranked response
 - Multiple choice
 - ‘Select one’ vs. ‘Select all that apply’
 - Likert scale



Classification and Demographic Questions

- Gathers objective characteristics of respondents:
 - Gender, ethnicity, religious affiliation.
- Can be asked in different forms:
 - E.g. Age can be an open-ended question, a multiple-choice question or be assessed by enquiring about the date or birth.
 - Depends on the researcher's preference.

Multiple-choice questions: Select one response

- This question type provides pre-determined response options: Respondents must choose one answer.
- Key criteria for this question type is that response options should be:
 - Exhaustive: everyone fits into at least one category.
 - Exclusive: everyone fits into only one category.
 - Unambiguous: response categories mean the same to everyone.

Multiple choice questions: ‘select all that apply’

- This type requires more time to analyse than types where only one answer is selected.
- This can be a very useful question type in some cases:
 - ‘How did you hear about this event? Tick all that apply’.
- If this is only used for descriptive statistics, the time taken to analyse the data is reduced.

Likert scale questions

- This question type should be used when the measured variable has multiple levels:
 - E.g. levels of agreement, concern, confidence etc.
- The scale should always have a neutral option:
 - E.g. Strongly agree, agree, neutral, disagree, strongly disagree (also a 'don't know'/'no opinion', etc.).

Likert scale questions

Science
engagement
indicators

[Impact Measures]

*Scientific self-
efficacy [Impact
Measure]*

*Degree of science
interest (reverse)
[Impact
Measure]*

7. Please indicate your
level of agreement with
the following statements:

*I feel capable of
understanding
science.*

*Science is not for
me.*

Likert scale

Strongly Disagree
(1) to Strongly
Agree (7) and
Prefer not to say
or no opinion

Problems of the Response Process

- When designing your questions, you should consider things that can go wrong.
- Respondents could:
 - misinterpret the question.
 - forget crucial information: 'memory failure'
 - guess what the question means.
 - apply answers to inappropriate response categories provided.

What to do with survey errors

- Qualitative survey errors aren't as problematic, research doesn't require standardisation:
 - Pre-/post- comparison: did change affect the data?
- Be careful about pre-categorizing data:
e.g. age

Avoiding Survey Bias

- Using a biased survey reduces the reliability and validity of your survey research.
- You should try to avoid the various forms of bias when designing your survey:
 - Editing, getting feedback and pilot testing are essential to reducing survey bias.

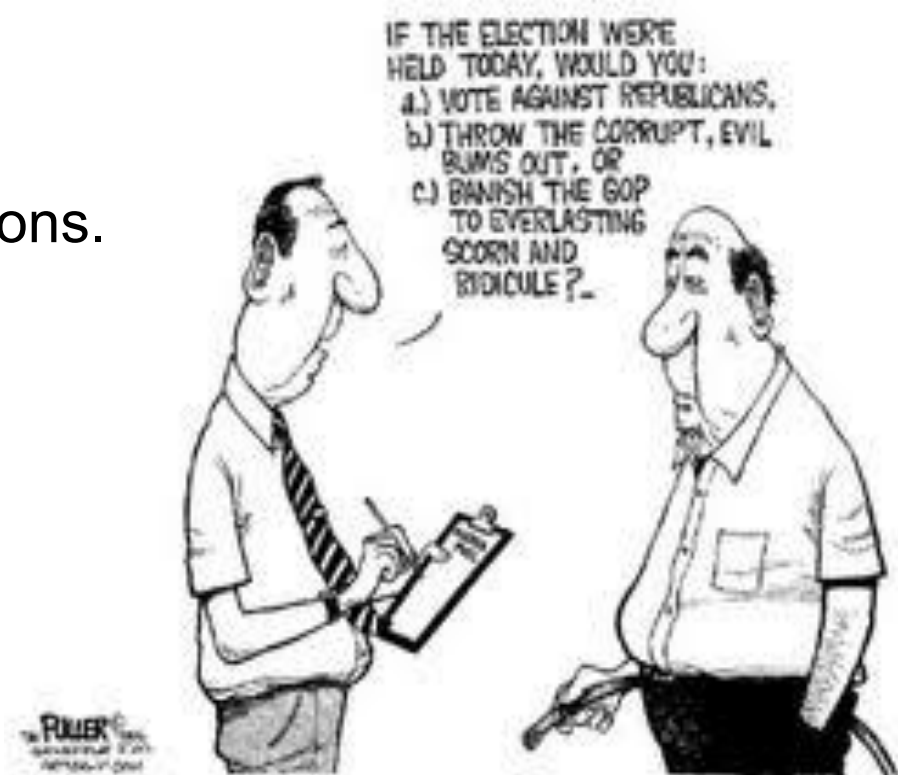


Type of Bias	What is it	Example
Researcher Expectancy Effect	Researchers unintentionally introduce bias by designing survey questions and response options around their existing assumptions.	A business's customer service team expecting positive feedback might unintentionally bias their survey by asking leading questions.
Acquiescence Bias	Respondents tend to agree with Likert scale (level of agreement) statements.	If all such Likert scale statements are framed positively, the results may skew towards agreement.
Demand Characteristics	Respondents may alter their answers based on what they think is the researcher's preferred result.	Being asked to give feedback about a hospital by a uniformed hospital worker may result in more positive responses.
Social Desirability Bias	Respondents may over-report views and behaviours that are widely praised in society and to make themselves look better.	Inaccurately reporting higher levels of recycling or charitable donations in order to appear more caring is typical of this bias.

Table adapted from 'Types of Survey Bias to Avoid' from *Doing Real Research* by Jensen, E. and Laurie, C. (SAGE, 2014).

Survey Design Flaws (Avoid!)

- **Demand Characteristics:** Participants will alter their responses in accordance with what they believe to be the evaluators' expected results.
 - This can happen when questions make the expected outcome clear, or other cues give away researchers' expectations.
- **Expectancy effect:**
When evaluators unintentionally bias results in accordance with expected results.
(e.g. by asking biased questions)



Survey Design Flaws (Avoid!) continued

- **Acquiescence Bias:**

A bias from respondents' tendency to agree with statements

→ Control for this by including reverse wording items on agreement scales

(e.g. 'I found the presentation confusing')



“Put me down for whoever comes out ahead in your poll”.

Survey Design Flaws

- Beware of social desirability bias
- Phrase questions e.g. about their prior knowledge or visiting experience in a way that respondents can answer truthfully without feeling stigmatized or awkward.
 - e.g. *'sure, I read all the information signs'*.



“Let’s see...number of cheeseburgers eaten in a typical month? three...no, I’ll put down four.”

Further Survey Biases to avoid

- Double-barrelled questions, 2 questions in 1:
 - May have 2 different answers.
- Leading questions:
 - These reveal the researcher's expected response.

How satisfied are you with the check in and check out process?

Very dissatisfied

Somewhat dissatisfied

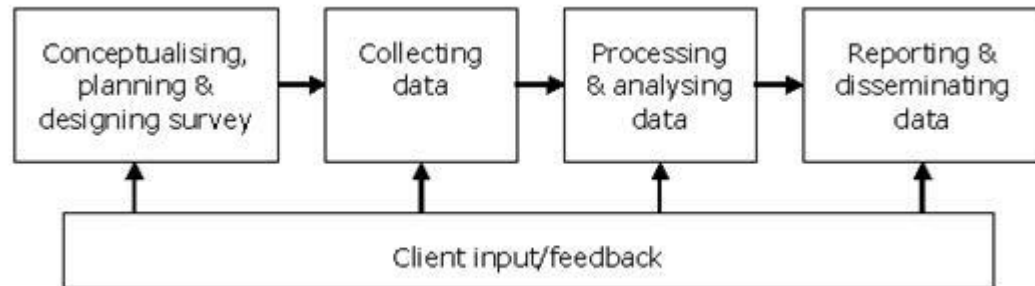
Neutral

Somewhat satisfied

Very satisfied

Further Survey Biases to avoid

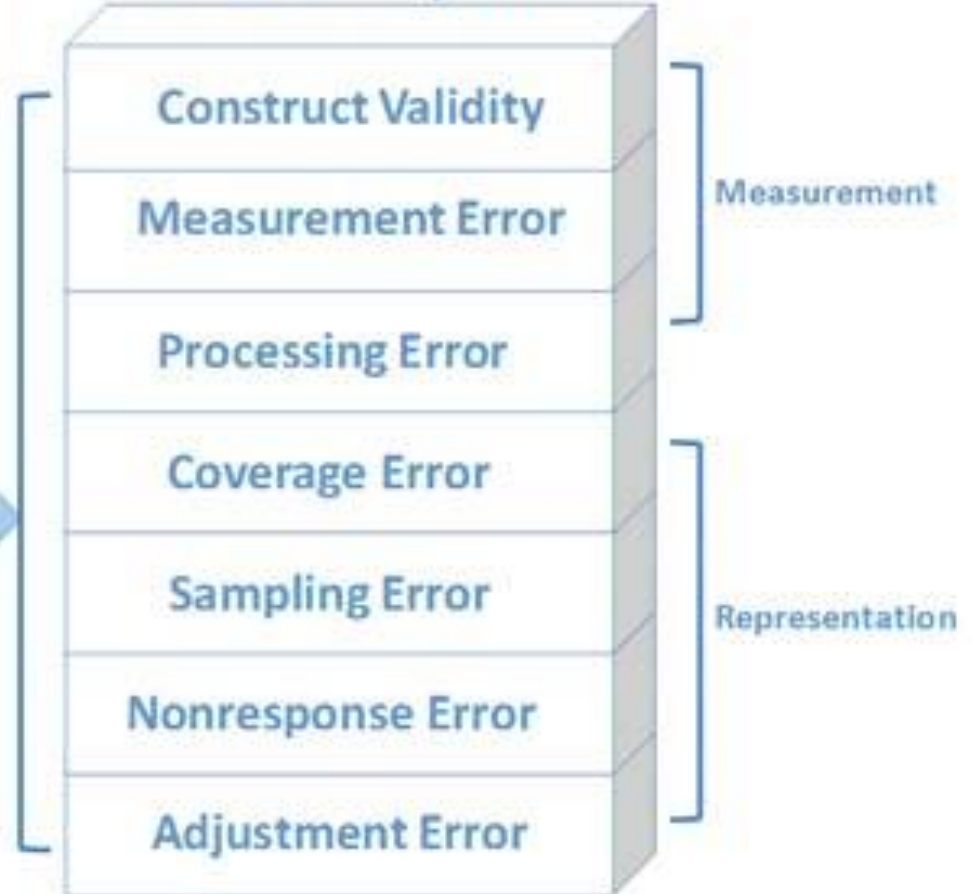
- Asking unrealistic questions:
 - Only ask questions it is realistic to expect your sample to know the answer to.
- Getting someone experienced to give feedback is beneficial to your research.



Fitness for Intended Use



Total Survey Error



Survey Biases from Self-Report

- Many surveys ask respondents to 'self-report' information about events, beliefs or attitudes.
- Self-report allows for direct access to respondents' views.
- However, self-report can be a source of bias:
 - Report is only ever a representation of the event.
 - If they are asked to report on behalf of someone else.
 - If they are expected to recall unrealistic information.
 - If they are expecting to predict future behaviour.

Survey Design: Key concepts

- **Accuracy** – Is the survey actually measuring the outcomes it purports to?
- **Confounding Variables:** Failure to take into account the fact that the experience under study may include more than one factor affecting the outcome you are measuring.
- This is a particularly challenging issue with post-visit only, retrospective data collection

Tips for good survey design

- Label each of the response options you use to increase reliability (e.g. 1 – Strongly disagree, 2 – Disagree, 3 – Somewhat disagree, etc.)
- Don't ask about events in the distant past if you want accurate recall
- Use the your respondents' language wherever possible

Important Tips to Remember

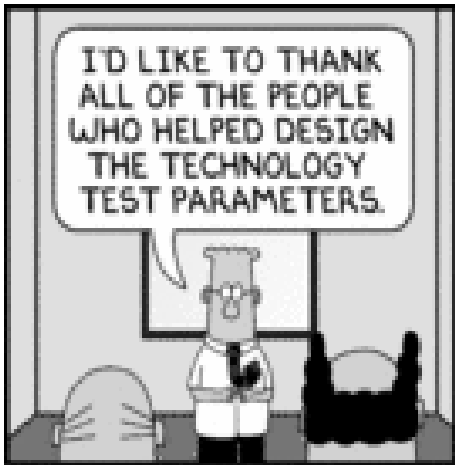
- For survey questions, consider:
 - Neutrality
 - Clarity and simplicity
 - Specificity
 - Brevity
 - Using single questions (not double-barrelled)
- Remember to use a range to question types.
- Try and use some sort of pilot testing.

SUMMARY

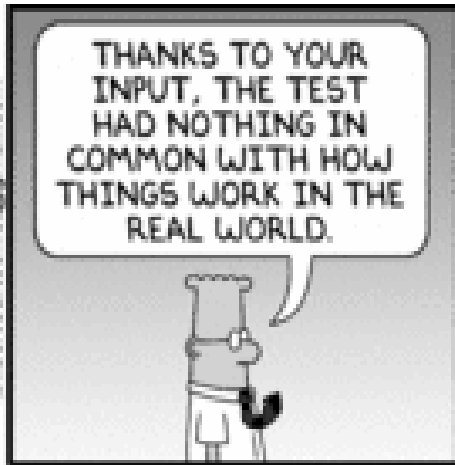
- A survey is standardized method of collecting data from **individuals**.
- Survey design is a complicated process involving careful consideration, editing and refinement.
- The process will involve many important decisions.
- Questions should be varied in type and avoid mistakes and biases.
- Good to have standard data collection procedures.
- Electronic devices can be used to conduct surveys.

Summary: To avoid

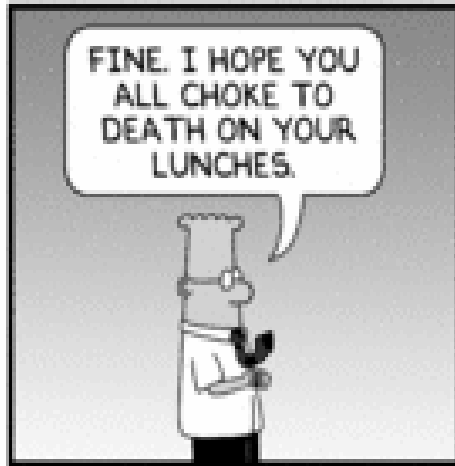
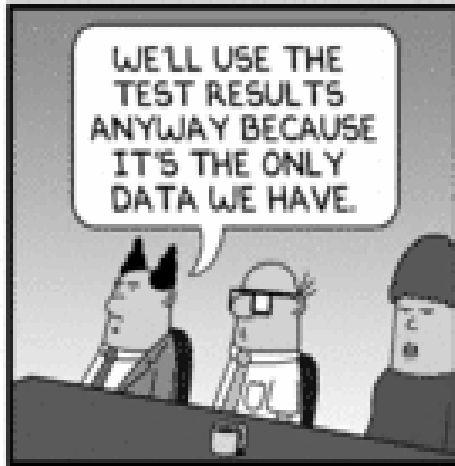
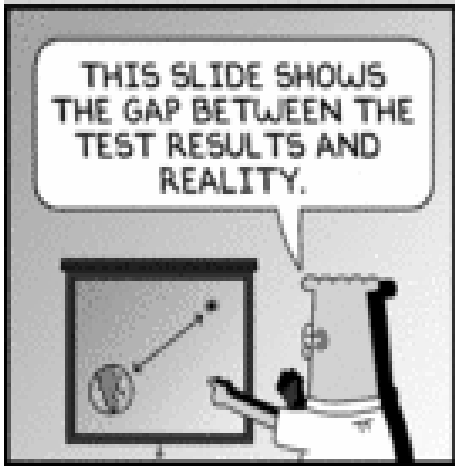
- **Response Bias:** A bias in your survey responses due to the survey design rather than respondents' actual views.
- **Sampling Bias:** Unintentional sampling of respondents that introduces systematic bias into the results. (e.g. only approaching 'friendly looking' people)



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