More Basic Concepts

I. Other Question Types

II. Categorization

III. Cognitive testing

IV. Piloting

V. Translation

I. Other Question Types

Open-ended questions (open vs. closed distinction)

Example: “Describe your feelings about your relationship with your roommate?”

I. Other Question Types

Open-ended questions

Advantages:

- May be easier to ask as not leading
- Exploratory – discovery of something unanticipated might happen
- Answers in respondent's own language
- Can make with no restrictions on what the respondent wants to say

I. Other Question Types

Open-ended questions

Disadvantages:

- Time consuming to code and interpret
- Can invite overly lengthy or non-relevant responses
- May be difficult to assess for reliability

I. Other Question Types

Question with Pre-Set Categories

Sometimes of interest to provide a set of categories to choose among

Example: “Which is your favorite activity after dinner?”

a. Watch a video at home
b. Look at social media on my phone
c. Work
d. Go out with friends

I. Other Question Types

Questions with Pre-Set Categories

Should be mutually exclusive (non-overlapping)

Should be exhaustive (all categories covered) or near exhaustive

Can provide "other" option to capture any unanticipated categories

e.g., "Other, specify____"

Consider whether checklist (set of dichotomous options) is preferrable

I. Other Question Types

Questions with Pre-Set Categories: Possible Pitfalls

Rarely endorsed categories may limit analyses

May create a forced choice or questions may create coarse categories ("I feel upset or annoyed")

Coarse categories are subject to potential misclassification and there may be more precise alternatives to asking a binary/categorical question

Artificially dichotomizing when a continuous variable would be better?

I. Other Question Types

Checklists:

Has a doctor told you have any of the following conditions?

__heart disease

__cancer

__diabetes

__hypertension

Each checked item is given a 1 and each non-checked item is given a 0

I. Other Question Types

Q sort (or Q-Methodology; Stephensen, 1953)

Another alternative to open-ended questions

- Desire to elicit responses to a set of possible options
- May help if respondents might have trouble articulating responses

Respondents given a series of statements or adjectives on cards

Cards are sorted into piles (designated or chosen by respondent) according to a subjective judgment)

Short video: Q sort method (one way to use Q sorting)

I. Other Question Types

Q sort

Example: Describing a roommate…

Is easy to get along with

Cleans up after making a mess

Never gets angry

Is noisy

I. Other Question Types

Q sort (or Q-Methodology; Stephensen, 1953)

Short video: Q sort method (one way to conduct a Q sort)

I. Other Question Types

Q sort

Might be used for a variety of purposes

- Qualitative information or quantitative analysis
- Evaluation of potential questions for a survey
- Understanding grouping or rating processes
- To elicit think out loud explanations about the topic to explore cognitive processes or attitudes

II. Categorization

Artificial dichotomization: splitting an otherwise continuous scale into discrete categories

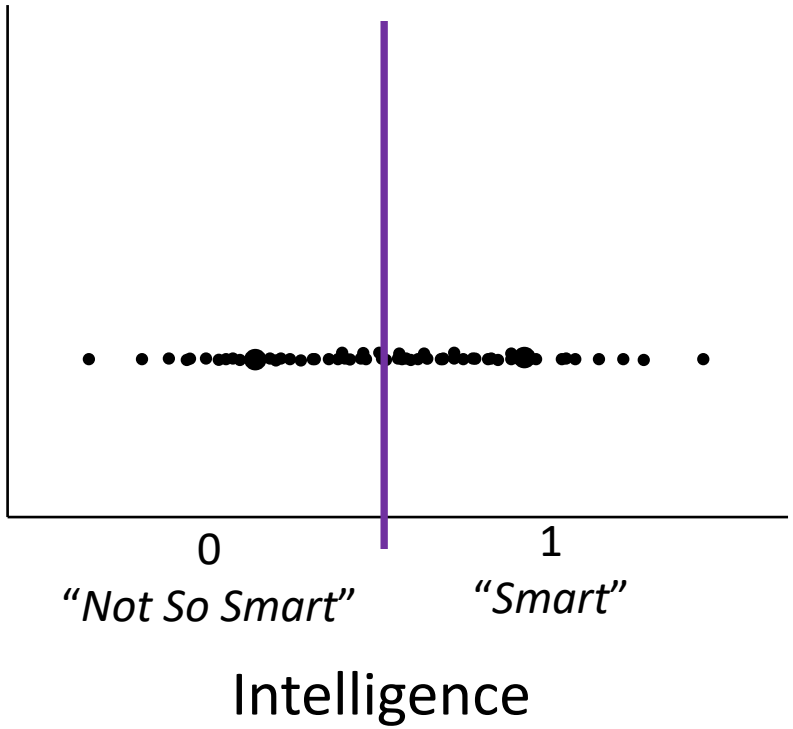
- Split continuous score at the mean, median, or other cutpoint has a number of potential problems
- Silly example: intelligence measure

  > 100 → *"smart"*

  < 100 → *"not so smart"*

II. Categorization

Artificial dichotomization

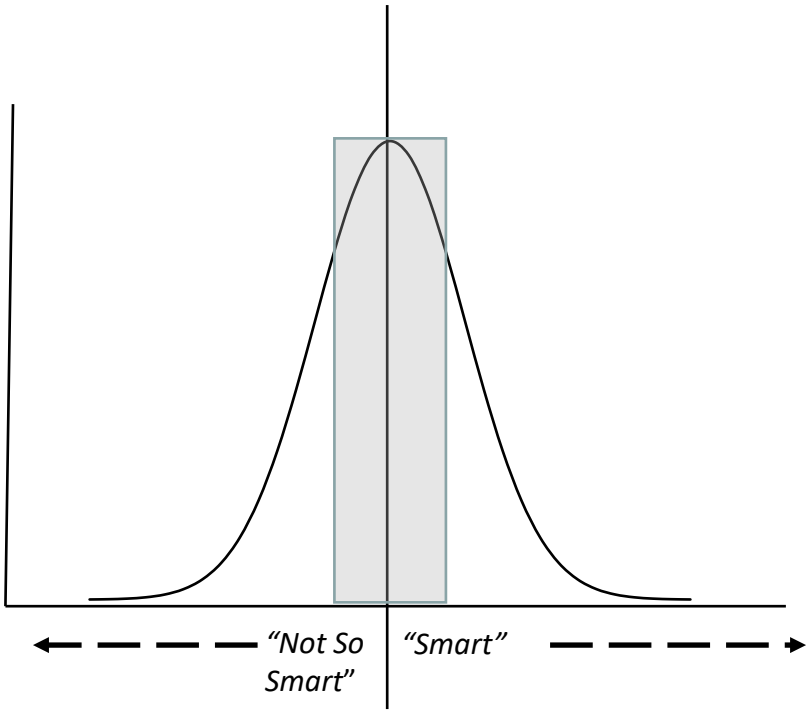


II. Categorization

Artificial dichotomization

Incorrectly classifies some cases

Classification error possible; most likely in center



II. Categorization

Artificial dichotomization

Statistical pitfalls

Reduces correlations substantially (Cohen, 1983; Peters & Van Voorhis, 1940); and therefore increases Type II errors

Dichotomizing one variable as if randomly throwing away a third of the cases; dichotomizing two, as if throwing away 60% of the cases (Cohen, 1983)

Can lead to increases in Type I errors for some samples too (MacCallum, Zhang, Preacher, Rucker, 2002)

III. Cognitive Interviewing/Testing

- Preliminary testing of a new measure, usually with just a few respondents
- Can evaluate the question wording and response options (clarity, cultural responsivity, expected interpretation)
- Respondents are often asked to think out loud after reading each question and give impressions of how they interpret the question and make decisions about responding
- Tourangeau and colleagues (2000) describe four processes that can be examined: comprehension, retrieval, judgment, response

Collins, D. (2003). Pretesting survey instruments: an overview of cognitive methods. *Quality of life research, 12*, 229-238.
Tourangeau, R., Rips, L. J., & Rasinski, K. (2000). *The psychology of survey response*. Cambridge University Press.

III. Cognitive Testing

Cognitive Model of Question-Response

	Cognitive Stage	Definition	Response Errors/Question Problems
Stage 1	Comprehension	Respondent interprets the question	Unknown terms, Ambiguous concepts, Long and overly complex
Stage 2	Retrieval	Respondent searches memory for relevant information	Recall difficulty
Stage 3	Judgment	Respondent evaluates and/or estimates response	Biased or sensitive, Estimation difficulty
Stage 4	Response	Respondent provides information in the format requested	Incomplete response options

Source: Washington Group on Disability Statistics:
https://www.cdc.gov/nchs/data/washington_group/meeting5/wg5_appendix4.pdf

IV. Pilot Testing

- Often used as a stage before launching a larger study
- Usually data collected on 30 or more participants with the intention of using some statistical tests
- Has a number of possible functions:
  - Explore feasibility of the procedures
  - Item analysis to determine if any revisions of scale are needed
  - Determine time to complete and whether length is appropriate
  - Sometimes examine validity and relationship to other measures or intervention

Tourangeau, R., Rips, L. J., & Rasinski, K. (2000). *The psychology of survey response*. Cambridge University Press.

V. Translation

- Translation to another language is best done as a multiple-stage process
- Forward – initial translation
- Backward – translate back to original language to confirm
- Modifications
- Cognitive pretesting or piloting
- Analysis of measurement properties

Tourangeau, R., Rips, L. J., & Rasinski, K. (2000). *The psychology of survey response*. Cambridge University Press.

V. Translation

- Translators who are familiar with the subject matter preferable
- Using more than one translator is ideal, parallel (independent) or committee possible
- Meaning equivalence vs. literal equivalence
- Psychometric evaluation needed to determine equivalence in reliability and validity (e.g., cross-cultural comparison study)

Tourangeau, R., Rips, L. J., & Rasinski, K. (2000). *The psychology of survey response*. Cambridge University Press.