Using web probing to understand the cognitive processes underlying respondents’ behavior when confronted with check-all and forced-choice questions?

Background

- In check-all-that-apply questions respondents are typically presented with a list of multiple items and are asked to mark all that apply to them.
- In forced-choice questions the response options are presented as a series of “yes/no” questions and the respondent explicitly indicates for each item whether it applies or not.
- The two formats do not produce comparable results:
  - In forced-choice questions the mean number of response options marked with “yes” is higher than the mean number of response options marked affirmatively in check-all questions (Rasinsky et al., 2009; Otero et al., 2006; Thomas & Klein, 2006; Tsuchiya & Hirai, 2010).
  - Higher endorsement has been replicated across different types of questions, countries and languages, and survey modes (Nolasco et al., 2011; Thomas & Klein, 2006; Tsuchiya & Hirai, 2010).
- The response task and subsequently the strategies of respondents for answering are fundamentally different when responding to questions either in a check-all or in a forced-choice format.

Research Questions:

1. Can web probing tell us something about how format effects happen?
2. Can web probing be used to understand the differences between check-all and forced-choice question formats?

Web Probing

- Open and closed probing questions are developed and then implemented into an online questionnaire.
- Focus here on response strategies: How respondents answer questions, not on respondents problems.
- Benefits:
  - Time and resources saving recruitment of respondents
  - Realization of larger sample sizes
  - Quantification of results
  - No interviewer effects / more standardization
- Limitations:
  - Open probes require more effort by respondents

Experimental Design (I)

- Respondents: N = 475 (236/239), M = 47, from 20 to 82
  - randomly assigned to the two response formats
  - not representative of the German population
- Data collection in November 2014

Experimental Design (II)

Questions

- Q1: Characteristics of a successful relationship (9 items)
- Q2: Considered possibilities of political influence (10 items)
- Q3: Issues respondents worry about (7 items)

Probes

- General probe: “What did you consider when answering?”
- Specific closed probe: “You did not select the item(s) X. Was it because a) you did not noticed it, b) it does not apply to you, c) you were not sure whether it applies, d) for some other reason?”

Aimed at

- Understanding the response process
- Understanding the reasons why items are left blank

Results (I)

- Mean count of “Yes” responses
  - Check-All: 4.0, 5.4, 2.5
  - Forced-Choice: 2.4, 3.5, 8.9

- Completion times
  - Check-All: 31.3, 32.8, 43.2
  - Forced-Choice: 40.0, 32.9, 26.9

- Productivity of general probe – across all three questions in %
  - Check-All: 80.5, 81.8, 9.1
  - Forced-Choice: 74.2, 23.0, 2.8

- Patterns of interpretation Q1 – Characteristics relationship
  - Precondition for a partnership
  - Explaining why characteristics not marked
  - Additional characteristics
  - Own experience
  - Explaining marked characteristics
  - Basis of a relationship

Results (II)

- Patterns of interpretation Q2 – Possibilities of political influence
  - About politicians
  - No interest
  - General protest
  - Why options not considered
  - Options used
  - Specific examples
  - Democracy
  - Participation

Patterns of interpretation Q2 – Reasons why items are left blank in %

- Check-All: 20, 43, 13
- Forced-Choice: 13, 40, 14

Patterns of interpretation Q3 – Issues to worry about

- Specific topics
- Not particularly worried
- Global criticism
- Global concerns
- Globalization
- Personal impairment
- Relevance and importance of this topic

Conclusion

Insights:

- Patterns of interpretation are the same but frequencies differ across formats.
- Reasons for leaving options blank differ across formats.
- Response task is perceived in different ways.

Limitations of web probing:

- No one can follow up on incomplete answers, provide clarification.
- Probing is restricted to scripted questions previously programmed.
- 20% of responses are not interpretable.
- Willingness to answer probes thoughtfully decreases over time.
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