Evidence of the response processes for extending question-and-answer models in the multi-national web survey context

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OUTLINE

1. INTRODUCTION

2. OBJECTIVES

4. METHODS AND DESIGN

6. ANALYSIS

7. EXPECTED RESULTS

8. DISCUSSION
It is the reference model since it was proposed in the 80’s (e.g., Tourangeau, 2018)

Table 2. Components of the response process

<table>
<thead>
<tr>
<th>Component</th>
<th>Specific Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehension</td>
<td>Attend to questions and instructions</td>
</tr>
<tr>
<td></td>
<td>Represent logical form of questions</td>
</tr>
<tr>
<td></td>
<td>Identify question focus (information sought)</td>
</tr>
<tr>
<td></td>
<td>Link key terms to relevant concepts</td>
</tr>
<tr>
<td>Retrieval</td>
<td>Generate retrieval strategy and cues</td>
</tr>
<tr>
<td></td>
<td>Retrieve specific, generic memories</td>
</tr>
<tr>
<td></td>
<td>Fill in missing details</td>
</tr>
<tr>
<td>Judgment</td>
<td>Assess completeness and relevance of memories</td>
</tr>
<tr>
<td></td>
<td>Draw inferences based on accessibility</td>
</tr>
<tr>
<td></td>
<td>Integrate material retrieved</td>
</tr>
<tr>
<td></td>
<td>Make estimate based on partial retrieval</td>
</tr>
<tr>
<td>Response</td>
<td>Map judgment onto response category</td>
</tr>
<tr>
<td></td>
<td>Edit response</td>
</tr>
</tbody>
</table>

Source: Tourangeau, Rips and Rasinski (2000, p.8)
Introduction (2/4)

Some questions that guide our research:

- Is the model still up-to-date?
- Is (...) adequate regardless the administration mode?
- Is (...) adequate for 3MC survey research?
- Do we need more comprehensive models to investigate into the “ecology” of the response processes (administration mode effects, cultural dimensions, response sets, etc.)?
Introduction (3/3)

The ImpExp model

Shulruf, Hattie & Dixon (2008)

Fig. 1 The ImpExp model
Web Probing (1/2)

- Behr et. al (2017) “web probing is the implementation of probing techniques from cognitive interviewing in web surveys with the goal to assess the validity of survey questions.” (p. 1).

![Image showing a survey question and a probe]

*Figure 3: Closed-ended item and probe on next screen, making use of automatically inserting the previous answer into the next question.*
Table 1: Comparative perspective on cognitive interviewing vs. web probing

<table>
<thead>
<tr>
<th></th>
<th>Cognitive interviewing</th>
<th>Web probing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size of respondents</td>
<td>+</td>
<td>Large sample sizes &amp; good assessment of prevalence of errors / patterns possible</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>Typically small sample sizes</td>
</tr>
<tr>
<td>Coverage of target groups</td>
<td>+</td>
<td>Special target groups, <em>including</em> illiterate, old, poor, ill, etc. can be reached</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>Only online population can be reached</td>
</tr>
<tr>
<td>Geographical coverage</td>
<td>+</td>
<td>Larger coverage as long as people have Internet access</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>Typically limited to specific geographical areas</td>
</tr>
<tr>
<td>Probing</td>
<td>+</td>
<td>Flexible, spontaneous probes possible, reacting towards unforeseen issues</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>Standardized probes → comparability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If flexible and spontaneous approach prevails → potential lack of comparability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Standardized probes → potentially insufficient information</td>
</tr>
</tbody>
</table>
Objectives: Research questions

- How we can make “web probing” more flexible (“adapted to the responses given to the target questions“) and more similar to cognitive interviewing?

- How we can achieve “integration” through the research phases combining “psychometrics” and qualitative evidence from web probing within a mixed-method research?

  • Does the sequence in which multiple probes in Web Probing are presented to the respondents affect their response behaviors to these probes? (Meitinger, Braun and Behr, 2018)

  • What happen with response behaviors if we extend the number of probes? …. and if we include different kinds of probes?
Study design – Participants & material

• From an online panel, 500 participants from Germany and from Spain each (1,000 total)

• Participants’ characteristics (Quota):
  ✓ Age: 18-65 years old (approx. equal distribution to the groups of 18-30, 31-50, 51-65),
  ✓ Gender (approx. equal distribution of men and women)
  ✓ Educational level (approx. equal distribution of high and low levels of education)

• Protocols implemented in Unipark software and response analyzed by Evalanswer (GESIS)

• Target questions taken from European Social Survey Round 8.
Investigating sequence effects – „Replication“ of Meitinger, Braun and Behr (2018)

„Taking all things together, how happy would you say you are?“

Extremely unhappy

German Item: „Alles in allem betrachtet, was würden Sie sagen, wie glücklich sind Sie?“

Spanish Item: „En términos generales, ¿en qué medida se considera usted una persona feliz o infeliz?“
Study design – Design (2/6)

**Category Selection Probe (Group 1)**
Por favor, explique por qué se ha decidido por “#v_XXX#”.
La pregunta decía: “En términos generales, ¿en qué medida se considera usted una persona feliz o infeliz?”
Su respuesta fue "#v_XXX#" en una escala desde el 0 (Absolutamente infeliz) al 10 (Absolutamente feliz).

**Please explain why you selected “#v_XXX#”.**

**Specific Probe (Group 1)**
¿En qué características de “una persona feliz” ha pensado Ud. al contestar a la pregunta?
La pregunta decía: “En términos generales, ¿en qué medida se considera usted una persona feliz o infeliz?”

**What characteristics of “a happy person” did you have in mind when you were answering the question?**

**Comprehension Probe (Group 1)**
¿Qué entiende Ud. por la expresión “En términos generales”? 
La pregunta decía: “En términos generales, ¿en qué medida se considera usted una persona feliz o infeliz?”

**What do you understand by the term „Taking all things together“?**
Random assigned participants will receive the probes in two different orders

→ Experimental design:

- **Sequence of probes in experimental group 1 (Cat.)**
  - Category-Selection  →  Specific  →  Comprehension

- **Sequence of probes in experimental group 2 (Compr.)**
  - Comprehension  →  Specific  →  Category-Selection
New Probing to investigate

**Process-Oriented Probe**
- How have you arrived at your answer “XXX”? Please tell us what you have had in mind: ideas, thoughts, etc., until you have chosen an answer.

**Process-oriented Probe (General)**
- How have you arrived at your answers? Please tell us how you have processed the list of the possible answers until you have chosen your answers that you have selected: What have done first, second, etc., until you have chosen one or several answers.

**Category Selection Probe (Hypothetical)**
- What would have to occur so that you would have decided for the answer “XXX” instead of “XXX” in this question?
New Probing to investigate

Category Selection Probe (Integrated)

• You have answered “XXX” to the question about your health, and “XXX” to the question if you are “hampered in your daily activities in any way …”. Please explain why you have selected these answers.

Evaluative Probe

• To what extent do you feel it has been difficult to answer this question?
C7: How is your health in general? Would you say it is…(very good – good – fair – bad – very bad)

C8: Are you hampered in your daily activities in any way by any longstanding illness, or disability, infirmity or mental health problem? (Yes a lot – Yes to some extent – No)
**Study design – Design (5/6)**

**Individual Probing vs. Integrated Probing**

- **D22**
  - Cat Sel. Probe
  - Specific Probe

- **D23**
  - Cat. Sel. Probe
  - Evaluative P.

**D22:** Do you think that climate change is caused by natural processes, human activity, or both? (Entirely by natural processes - … - Entirely by human activity)

**D23:** To what extent do you feel a personal responsibility to try to reduce climate change? (0-Not at all - … - 10-A great deal)
Por favor, explique por qué se ha decidido por la respuesta “#v_XXX#”.
La pregunta decía: “¿Cree Ud. que el cambio climático se debe a procesos naturales, a la acción humana, o a las dos cosas?”

You have answered „#v_xxx#“ to the question about what you think climate change is caused by and „#v_xxx#“ (On a scale from 0-Not at all-, to 10-a great deal) to the question about „To what extent do you feel a personal responsibility to try to reduce climate change?“. Please explain why you selected these answers.

Ha contestado “#v_XXX#” a la pregunta sobre a qué cree que se debe el cambio climático, y “#v_XXX#” (En una escala desde 0 –En ninguna medida-, a 10 –En gran medida), a la pregunta sobre “¿En qué medida siente Ud. la responsabilidad personal de intentar reducir el cambio climático?”. Por favor, explique por qué se ha decidido por estas respuestas.
New Probings to investigate – Translation problems (2 examples)

ES: ¿Cómo ha llegado a su respuesta “XXX”? Por favor, cuente todo lo que ha tenido en cuenta: ideas, pensamientos, etc., hasta elegir la respuesta.

DE: Wie sind Sie zu Ihrer Antwort “XXX” gekommen? Bitte erzählen Sie, was Sie dabei im Sinn gehabt haben: Ihre Einfälle, Gedanken, etc., bis Sie sich für Ihre Antwort entschieden haben.

• **Difficulties:**
  – Translation of „tener en cuenta“
  – Translation of „ideas“
New Probing to investigate – Translation problems (2 examples)

**Category Selection Probe (Integrated)**

ES: Ha contestado “XXX” a la pregunta sobre a qué cree que se debe el cambio climático, y “XXX” (En una escala desde 0 – En ninguna medida, a 10 – En gran medida), a la pregunta sobre “¿En qué medida siente Ud. la responsabilidad personal de intentar reducir el cambio climático?”. Por favor, explique por qué se ha decidido por estas respuestas.

DE: Sie haben auf die Frage, was Sie glauben, wodurch der Klimawandel verursacht wird mit “XXX” geantwortet und auf die Frage, wie sehr “Sie sich persönlich verantwortlich [fühlen], einen Beitrag zu leisten, damit der Klimawandel reduziert wird” mit “XXX” (auf einer Skala von 0 - Überhaupt nicht, bis 10 - Sehr stark). Bitte begründen Sie, warum Sie sich für diese Antworten entschieden haben.

**Difficulties:**
- Grammatical structure of Spanish and German is different (scale reminder at the end of the sentence in German and position of the verb in the middle of the sentence in German)
Analysis

First part: replication study of Meitinger, Braun and Behr (2018)
• Categorize nonresponse into the schema proposed by Behr et al. (2017), see below
• Develop a coding scheme for answer content to the several probes
• Then, count number of response themes, highlight obvious signs of loss of motivation, analyze mismatching answers as well as response length
• Examine if there are differences between the two experimental groups (different sequences)
• Add respondents’ characteristics to the analysis to get a more comprehensive picture of response behavior and data quality among subgroups of respondents

<table>
<thead>
<tr>
<th>Category</th>
<th>Type of Probe Nonresponse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1</td>
<td>Complete nonresponse: respondent leaves a text box blank</td>
</tr>
<tr>
<td>Category 2</td>
<td>No useful answer: response is not a word e.g., “dfgjh”</td>
</tr>
<tr>
<td>Category 3</td>
<td>Don’t know: e.g., “I have no idea,” “DK,” “I can’t make up my mind”</td>
</tr>
<tr>
<td>Category 4</td>
<td>Refusal: e.g., “no comment,” “see answer above”</td>
</tr>
<tr>
<td>Category 5</td>
<td>Other nonresponse: responses that are insufficient for substantive coding: e.g., “my personal experience,” “it depends,” “just do,” “just what it is”</td>
</tr>
<tr>
<td>Category 6</td>
<td>One word only: respondent just writes a single word, e.g., “economy”</td>
</tr>
<tr>
<td>Category 7</td>
<td>Too fast response: respondent takes less than two seconds to answer</td>
</tr>
</tbody>
</table>
Expected Results
Based on the study of Meitinger, Braun and Behr (2018) we expect the following results:

Response Length:
Longer responses in exp. group 2 (Comp. Pr.) in Germany and in exp. group 1 (Cat. Sel. P.) in Spain

Nonresponse:
Spain less nonresponse than in Germany, basically no difference between exp. groups in both countries

Mismatching:
Germany much fewer mismatching than Spain in experimental group 2 (Comp. Pr.)

Motivation
In all countries participants complained the most at the third probe in exp. Group 2 (Comp. Pr.), Germany especially high percentage

Answer content:
In general, Germans mention much fewer themes than Spanish
Discussion

- Do we need more conceptual work to develop a solid theoretical framework? Equivalence, bias, validity in 3MC survey research?

- Can web probing provide validity evidence of the response processes like cognitive interviewing?

- How we can integrate validity evidence from different methods to improve equivalence in 3MC survey research?


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