Investigating the Impact of Scale Spacing on Responses in Web Surveys

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Background

- Existing research on web surveys shows that respondents may use visual cues to help interpret the questions or response options (e.g., Tourangeau, Couper, & Conrad, 2007; Couper, Conrad, & Tourangeau, 2007)
- Respondents may make inferences about the conceptual range covered by a response option based on its height or width
- Options that take up more space on the screen may be seen as representing a broader conceptual range than those encompassing less space
- Research found that including “Don’t know” and “No opinion” shifted means as compared to when these items were visually separated by a line or spacing (Tourangeau et al., 2004)

Hypothesis

- Respondents would be more likely to select a response option when it appears wider on the screen
  - Further from neighboring response options
  - Takes up more room on screen

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Neutral</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image.png" alt="Response options diagram" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Underlying dimension of agreement-disagreement
Data and Methods

• Conducted by Market Strategies International
• Fielded from June 23, 2010 through July 21, 2010
• Sample
  – One half of the sample for this survey was drawn from the Survey Sampling International's online panel
  – The other half of the sample was drawn from the panel of Authentic Response
  – 2,407 completions
• Questionnaire
  – Lifestyles and health survey

Items

• Q1: How many times have you seen a doctor over the past year?
  – 1 time or none
  – 2 times
  – 3 times
  – 4 times
  – 5 times or more
• Q2: How much would you say you agree or disagree with the statement "I like skim milk."
  – Agree strongly
  – Agree somewhat
  – Neither agree nor disagree
  – Disagree somewhat
  – Disagree strongly

Independent Variables

• Response option presentation
  – Horizontal options
  – Vertical options
• Scale spacing
  – Even options
  – Gap between first and second options
  – Gap between fourth and fifth options
  – First option in two lines
  – Fifth option in two lines
Response option presentation: Horizontally
Scale spacing: Even options

Response option presentation: Horizontally
Scale spacing: Gap between first and second options

Response option presentation: Vertically
Scale spacing: Gap between first and second options
Results

• Q1 (How many times have you seen a doctor over the past year?)
  – No main or interaction effects on response means

• Q2 (How much would you say you agree or disagree with the statement “I like skim milk.”)
  – No significant main effects of spacing on response means
  – Significant main effects of the presentation of response option on response means
  – Significant interaction effects on response means
Other Web experiments on spacing

• Study 1
  – One wide response option vs. evenly spaced option
  – Three types of items: probability, frequency, agreement
  – No significant effects of spacing on response means

• Study 2
  – Spacing (one wide response option vs. evenly spaced option) crossed with border around response options (presence vs. absence)
  – Little effects of spacing

• Study 3
  – Width of middle and each extreme response options varied vs. even spacing
  – More extreme (left) answers when extreme option wider
    • Significant in experiment 1
    • Marginal in experiment 2
  – More "neutral" answers when middle option wider
    • Marginal in experiment 1
    • No effect in experiment 2
Conclusions

• No consistent effects of manipulating the spacing of response options on answers
• The content of the options matter, but not their spacing
  – Nonsubstantive response ("Don’t know" and "No opinion") options should be separated from the substantive ones (Tourangeau et al., 2004)
• The orientation of the response options (horizontal vs. vertical) matter, but not their spacing
• The visual midpoint matters (whether it coincides with conceptual midpoint or not)
• Spacing by itself seems to be a weak cue

Thank you!

Any Questions?...

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References

**Response option presentation:** Horizontally
**Scale spacing:** Gap between fourth and fifth options

![Image](image1)

**Response option presentation:** Horizontally
**Scale spacing:** First option in two lines

![Image](image2)

**Response option presentation:** Horizontally
**Scale spacing:** Fifth option in two lines

![Image](image3)
Response option presentation: Vertically
Scale spacing: Even options

Response option presentation: Vertically
Scale spacing: Gap between fourth and fifth options

Response option presentation: Vertically
Scale spacing: First option in two lines
Response option presentation: Vertically
Scale spacing: Fifth option in two lines