What it Means to Specify for Multiple Modes

Presentation to Fed CASIC
Session on Multimode Surveys
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What I Do

- Systems implementation of multimode surveys
- Take specifications and make them work across all modes
- Analyze what we do and why
- Specification for combined Web, CATI, and paper modes is the topic for today
Multimode Implementation

- **Combined**
  - Mostly I’m talking about this

- **Not combined**
Specification for a Combined Multimode Implementation

- Makes you confront mode differences
  - This is good!

- Should not just concatenate specifications
  - Need a holistic perspective
  - A challenge for one-mode specifiers

- There can be legitimate differences between modes; edits are a good example
  - Web may employ a subset of edits used in CATI
The spec writer should be aware of:
- Multimode design paradigms
- Fundamental technical attributes of each mode
- Mode-specific traditions
- Specification environments

I’ll talk about each of these

See literature citations on the last slide
Multimode Design Paradigms

- **Unimode Design:**
  - Promotes common question formats between modes
  - Sometimes involves compromise (even a lot)
  - Can be easier to program

- **Generalized Design:**
  - Optimize the questionnaire for each mode separately
  - Can be harder or more expensive to program

REF: Dillman 2009, De Leeuw 2005 and other sources
## Technical Attributes of Some Modes

<table>
<thead>
<tr>
<th>Attribute / Mode</th>
<th>CATI</th>
<th>Web</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation</td>
<td>Aural</td>
<td>Visual</td>
<td>Visual</td>
</tr>
<tr>
<td>Transmission of response</td>
<td>Spoken</td>
<td>Typed</td>
<td>Written</td>
</tr>
<tr>
<td>Segmentation of form</td>
<td>Segmented</td>
<td>Varies</td>
<td>Not segmented</td>
</tr>
<tr>
<td>Dynamic / Passive medium</td>
<td>Dynamic</td>
<td>Dynamic</td>
<td>Passive</td>
</tr>
<tr>
<td>Administration</td>
<td>Interviewer</td>
<td>Self</td>
<td>Self</td>
</tr>
<tr>
<td>Pace</td>
<td>Respondent / Interviewer</td>
<td>Respondent / Computer</td>
<td>Respondent</td>
</tr>
<tr>
<td>Communication channel</td>
<td>Telephone</td>
<td>Browser</td>
<td>Paper</td>
</tr>
</tbody>
</table>

Leading causes of disparity depending on question type.

*REF: De Leeuw (JOS 2005) and other sources*
Two Visual Presentations

A paper visual display is not exactly the same respondent experience as:

a succession of Web screens
Disparate modes

- Profound mode differences: some examples
  - Different question format
    - Code-all versus a series of Yes / No
  - Different flow order
  - Additional fields in one or two modes

- Combined implementation and specification are harder for disparate modes

- MPR has seen from 0% to 50% disparity of fields in 3-mode surveys for combined implementation
Mode - Specific Traditions
(non-disparate situation)

- Common aspects between modes
  - Field names
  - Valid values
  - Flow order

- Common mode differences
  - Question wording
  - Field modifiers such as DK, RF, EMPTY
  - Edits
  - Display
Question Wording

- Optimal question presentation
  - Carefully craft questions that work well in all modes

- Notes, probes, and instructions

- Conditional text and fills

- Text to explain context for segmented Web and CATI modes
Field Modifiers by Mode
(the usual situation)

<table>
<thead>
<tr>
<th>Mode</th>
<th>DK, RF</th>
<th>EMPTY</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>Available</td>
<td>Allowed</td>
<td>May require for flow</td>
</tr>
<tr>
<td>Web</td>
<td>Not shown</td>
<td>Allowed</td>
<td>May prompt</td>
</tr>
<tr>
<td>CATI</td>
<td>Allowed</td>
<td>Not allowed</td>
<td></td>
</tr>
</tbody>
</table>

- **Flow specification depends on mode**
  (Unimode design would display DK / RF in all modes.)

- **Analytical interpretation is more complex**
Edits

- **Data definition (i.e., valid values)**
  - Applies to all modes; part of the system

  ```
  FIELDS
  Age : "What is your age?" : 10..110, EMPTY, DK, RF
  ```

- Suspicious range edits (concerns one field)

- Consistency edits (two or more fields)

- State the mode where each edit applies
  - Severity between modes may differ
<table>
<thead>
<tr>
<th>Mode</th>
<th>Edit Type</th>
<th>Severity</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper/data entry</td>
<td>Suspicious: No</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consistency: No</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Web</td>
<td>Suspicious: Yes</td>
<td>Soft</td>
<td>Apply strategically; Fields should be on the same browser page for a consistency edit</td>
</tr>
<tr>
<td></td>
<td>Consistency: Rare</td>
<td>Soft</td>
<td></td>
</tr>
<tr>
<td>CATI</td>
<td>Suspicious: Yes</td>
<td>Hard or soft</td>
<td>Commonly used; May be between any number of fields anywhere in the instrument</td>
</tr>
<tr>
<td></td>
<td>Consistency: Yes</td>
<td>Hard or soft</td>
<td></td>
</tr>
</tbody>
</table>

A soft edit can be suppressed. A hard edit must be fixed.
Display

- Most important for Web
  - Page breaks, keeping in mind . . .
  - For consistency edits, it is most helpful if all involved fields are on the same screen.
  - Can use display templates, e.g., name and address
  - New, complex layouts need a diagram

- Page-based display can be important for CATI if much navigation is expected
  - Economic and non-traditional surveys
  - Page breaks may not be the same as for Web
In-House Text Display Standards

- MPR's text display standards for Web and CATI are quite different, with respect to:
  - Emphasis (all modes)
  - Notes, instructions, and so on (mode dependent)

- But the specification for these text enhancements are the same
In-House Text Display Standards
(Spec to CATI Mode)

Info "The Goodness Foundation promotes stable communities by encouraging voluntary participation in community institutions such as schools, places of worship, and neighborhood clubs.

NOTE: [(If incentive group): INCENTIVE = [Incentive Amount] / (ELSE) CONTROL GROUP].

PROBE: The Goodness Foundation is a non-profit organization.

PROBE: We are not selling anything. Your answers are confidential.

PROBE: The survey will take 10 minutes at most if you are eligible."

[MPR List Shell for Demo]

The Goodness Foundation promotes stable communities by encouraging voluntary participation in community institutions such as schools, places of worship, and neighborhood clubs.

INCENTIVE = 25

The Goodness Foundation is a non-profit organization.

We are not selling anything. Your answers are confidential.

The survey will take 10 minutes at most if you are eligible."
Form of Specification Document

- One document with all modes, or not?
- These kinds of people use the specification
  - Client
  - Specification writer
  - Programmer
  - Operations staff including trainers
  - Users and testers
  - Data analyst
- A single format is unlikely to satisfy all users
Form of Specification Document (example)

<table>
<thead>
<tr>
<th>Mail</th>
<th>Web</th>
<th>CATI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A3.</strong> To what extent do you agree or disagree with the following statements?</td>
<td><strong>A3.</strong> To what extent do you agree or disagree with the following statements?</td>
<td><strong>A3.</strong> I'm going to read some statements and I want you to tell me the extent to which you agree or disagree with each of them.</td>
</tr>
<tr>
<td><strong>MARK ONE ANSWER FOR EACH QUESTION</strong></td>
<td><strong>Answer each item. For each item, choose only one answer.</strong></td>
<td><strong>a.</strong> First, if I work hard, I can successfully start my own business or non-profit venture.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Would you say you strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, or strongly disagree?</td>
</tr>
<tr>
<td>a. If I work hard, I can successfully start my own business or non-profit venture</td>
<td>a. If I work hard, I can successfully start my own business or non-profit venture</td>
<td>1 STRONGLY AGREE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 SOMewhat AGREE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 NEITHER AGREE NOR DISAGREE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 SOMEWHAT DISAGREE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 STRONGLY DISAGREE</td>
</tr>
<tr>
<td>b. The security of working for someone else outweighs the benefits of running my own business or non-profit venture</td>
<td>b. The security of working for someone else outweighs the benefits of running my own business or non-profit venture</td>
<td>b. The security of working for someone else outweighs the benefits of running my own business or non-profit venture.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Would you say you strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, or strongly disagree?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 STRONGLY AGREE</td>
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<tr>
<td></td>
<td></td>
<td>4 SOMEWHAT DISAGREE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 STRONGLY DISAGREE</td>
</tr>
<tr>
<td>c. Starting a business is much more desirable than other career opportunities I might have</td>
<td>c. Starting a business is much more desirable than other career opportunities I might have</td>
<td>c. Starting a non-profit venture is much more desirable than other career opportunities I might have.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Would you say you strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, or strongly disagree?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 STRONGLY AGREE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 SOMewhat AGREE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 NEITHER AGREE NOR DISAGREE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 SOMEWHAT DISAGREE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 STRONGLY DISAGREE</td>
</tr>
<tr>
<td>d. Starting a non-profit venture is much more desirable than other career opportunities I might have</td>
<td>d. Starting a non-profit venture is much more desirable than other career opportunities I might have</td>
<td></td>
</tr>
</tbody>
</table>

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**Mathematica Policy Research, Inc.**
Specification Document(s) for Programming

- **Combined implementation:**
  - Argues for one specification document

- **Not combined implementation:**
  - One document per mode is okay
  - But there is always the possibility of ‘cognitive drift’ between modes

- **Methodological considerations:**
  - Argues for one specification document
Form of Specification Document

- One document for all three modes
  - A few varieties of this

- One document for each mode
  - Done concurrently by separate people (w. c. s.)
  - One mode at a time in a sequence (better, not ideal)

- Flow of specification to programmer
  - All modes specified before the programming (much appreciated)
  - Flow the modes to the programmer one at a time (worst, this will cause problems)
Some Specification Environments

- New survey
  - Easiest to handle

- Old and repeated survey
  - One mode going to many modes is hard

- Organization
  - All modes executed by one group, easier
  - Modes are executed in different groups, harder
References


